

**Unpacking Value Creation through New Product Development at
the Bottom of the Pyramid:**

Evidence from Local Manufacturing Firms in Ethiopia

by

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BA. MSc, MBA

Dissertation Presented in Fulfillment of the Requirements for the Degree

Doctor of Philosophy in Marketing and Management

Faculty of Business and Economics

Macquarie University

March 2018

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Abstract

Delivering value to customers and fostering new product success at the bottom of the pyramid (BoP) are major challenges for local manufacturing firms. At the BoP, local manufacturing firms (which originate in the local community and are owned by locals) pursuing the development of new products as part of their strategy have to deal with significant challenges such as poor infrastructure, poor distribution channels, high citizen illiteracy rates, corruption, and lack of enforceable legal frameworks. In order to deliver value to customers and realise new product success, local firms in BoP markets need to create ways to overcome these challenges. One key focus for local BoP firms is to effectively manage their intra (widening their resource base, deploying capabilities) and extra organisational processes (establishing collaboration) which may help better drive new product development (NPD) projects towards successful outcomes. Yet, the literature remains almost silent about how these intra and extra organisational processes affect NPD at the BoP.

In an effort to raise awareness and address the silence of research on firms from BoP countries, this thesis develops three papers. The first paper (under 2nd round review at Industrial Marketing Management) examines how a firm's bricolage capability helps to enhance new product innovativeness and how social ties with civil society organisations and government bolster the impact of bricolage by moderating the relationship between bricolage and new product innovativeness. The study further discusses marketing capabilities as an important moderator of the relationship between product innovativeness and the firm's ability to create customer value. Data were obtained from managers of 150 Ethiopian local manufacturing firms and 325 active business customers. Drawing on the capability-based view and social capital theory, the findings show that bricolage has an inverted-U shape relationship with product innovativeness, and ties with civil society organisations attenuate this effect. Whereas our data do not support the moderating role of ties with governments. Further, the results demonstrate a significant

moderating role for marketing capabilities in translating product innovativeness into customer value at the BoP.

The second paper (under review at the Journal of Business Research) focuses on the role of NPD team's problem-solving creativity in enhancing new product performance. The paper seeks to identify factors (such as leadership style and role ambiguity) that facilitate or inhibit problem-solving creativity in NPD teams within BoP firms. Underpinned by social exchange theory and using a sample of 274 middle-level managers from local BoP firms in Ethiopia, the study shows that NPD team's creativity is a key to develop a new product that pays off financially in BoP markets. The study identifies that ambidextrous leaders (leaders who can deploy simultaneously transformational and transaction leadership styles) can reduce ambiguity in the minds of their NPD managers to foster their teams to look for new and better methods of performing tasks. The findings suggest that CEO's of BoP firms who engage in ambidextrous leadership attenuate the negative effect of role ambiguity on problem-solving creativity in their NPD teams.

The third paper (under review at the European Journal of Marketing) examines underlying mechanisms linking collaboration with customers and suppliers to new product advantage en route to creating affordable product and enhancing new product performance for local firms at the BoP. The study further focuses on the contingent roles of two environmental factors relevant to the BoP market context (i.e., market turbulence and competitive intensity). Survey data were collected from three respondent groups including two managerial positions including marketing and NPD managers in local BoP firms and their customers. Drawing upon social capital and institutional theories, the findings show that collaboration with customers and suppliers enhance the ability of local BoP firms to create new product advantages. The relationship between collaboration with customers and suppliers, and new product advantage is, however, impacted by the level of market turbulence BoP local manufacturers face. Market turbulence diminishes the capacity of customer

collaboration to generate new product advantage, while its effect on the supplier collaboration - new product advantage relationship was not supported. The study provides evidence for the view that new product advantage in the form of cost-efficiency and differentiation are determinants of affordability and new product performance at the BoP. The study confirms that new product advantage is translated into new product performance in environments with a higher level of competitive intensity. However, the benefit of product advantage in BoP markets to affordability diminishes at higher levels of competitive intensity.

Statement of candidate

I certify that the work embodied in this thesis, *Unpacking Value Creation through New Product Development at the Bottom of the Pyramid: Evidence from Local Manufacturing Firms in Ethiopia* has not been submitted for any other higher degree to any other university or institution other than Macquarie University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made. The co-authors included in earlier versions of Chapters 2, 3 and 4 were involved in the research at a supervisory level.

The research presented in this thesis was approved by University of Tasmanian Ethics committee (Reference number: H0015428, on 5th of January, 2016) and transferred and approved by Macquarie University Ethics Review Committee.

Hailu Getnet

March 2018

Acknowledgements

First, I want to express my deep and sincere gratitude to my principal supervisor, Professor Aron O’Cass, for bestowing me the opportunity to carry out my PhD research under his supervision. Professor O’Cass research leadership and openness to different methodological approaches helped me to fully indulge in my research. Thank you Professor for coaching me throughout the challenging moments of the journey which not only to find courage to resist bitter moments but also to think of reaching the new heights. Working with Professor O’Cass had such an amazing influence on me that eased the challenging moments of the journey for me and made me think of reaching new heights.

I would like to extend my gratefulness for the support and encouragement to my adjunct supervisor Dr. Hormoz Ahmadi (Australian Catholic University) and associate supervisor Dr. Vida Siahtiri (Macquarie University). Without your full supports, patient guidance and your wisdom, the PhD journey would not have been possible. Whenever I thought I cannot reach my destination, Dr Ahmadi was always there kept me going to reach my potential, for this reason, I consider myself fortunate to have been working with him. I am deeply indebted to Dr Siahtiri’s willingness and commitment to help me improve my research output to reach this far.

I also would like to thank my colleague research fellows, for our numerous insightful discussions together which helped me find valuable clues to resolve critical issues regarding my research.

Finally, I want to thank my family, parents and brothers for their perpetual support to retain a good spirit over all stages of my PhD research. I am indebted to all of you for your sacrificial devotion, and hope that someone will do the same for you in your time of need. May you all be blessed with abundant health and wealth.

Chapter 1

Introduction

1.1 Research background

Current research not only lacks a solid understanding about how local firms operating at the bottom of the pyramid (BoP) generate new product success and create value, but also does not elaborate how firms can satisfy their customers who are noted as experiencing significant financial hardship and living in poverty (Nakata, 2012; Viswanathan & Sridharan 2012). Customers in BoP markets are considered to be in general, uneducated, poor and difficult to reach and to profitably serve (Berger & Nakata, 2013). However, many have argued that there are bright growth prospects and noted business opportunities, local businesses have sought to address this market (Chikweche, 2013; Praceus, 2014). The dominant approach being used by local firms to address the demands of the BoP customers is through product innovation (Prahalad, 2012). Especially, new product innovations that fit the conditions and characteristics of poor customers (Agnihotri, 2015).

New products need to meet customers low price expectations beyond offering value to consumers in emerging markets (Ernst, Kahle, Dubiel, Prabhu, & Subramaniam, 2015). Products are likely to have an impact on welfare and living conditions of low-income customers (Dahlman & Kuznetsov, 2014). For example, at the BoP there have been new products (local innovations) in energy and medical devices such as fuel-efficient biomass cookstoves, cardio pad for heart disease diagnoses, and portable water pumps that have transformed the lives of millions of peoples in Sub-Saharan African BoP countries (Dessalegn & Merrey, 2015; Gebreegziabher, Van Kooten, & Van Soest, 2017; Noubiap, Jingi, & Kengne, 2014).

Research on NPD practices in the BoP context revolve around the theme of enriching firms' inter and extra organisational process such as widening their resource base and accumulating capabilities to develop new products (Ansari, Munir, & Gregg, 2012; Ernst et al., 2015; Schuster & Holtbrügge, 2014b). Given that an emerging body of knowledge increasingly focuses on the importance of firm's exploitation of existing capabilities and development of new capabilities in their NPD practices, further investigation on this research focus is vital (An et al.,

2017). As such, in the area of resource seeking and recombination behaviour (i.e., bricolage), the capability-based view and social capital theory have helped to shape our understanding about how firms use their scarce resources to promote innovation (Baker et al., 2016; Weerawardena & Mavondo, 2011). These theories can help to better comprehend and address issues in resource utilisation and capability development of BoP firms operating in resource constrained environments.

Given BoP firms operate under constraints, resources and capabilities of external partners are vital. It is in this context that social ties and collaboration, which are elements of social capital theory, become crucial in enhancing knowledge of BoP manufacturing practices (Acquaah, 2007). Collaborative initiatives embedded in social capital are seen as a mechanism to bypass institutional barriers in emerging countries (Tan, Zhang, & Wang, 2015; Webb, Ireland, Hitt, Kistruck, & Tihanyi, 2011). Institutional theory's underlying logic is that firm behaviour is influenced by the nature of its external environment (Sheng, Zhou, & Li, 2011). Specifically, for BoP firms to succeed, they must adapt their practices, especially in areas such as NPD, to the unique challenges and demands of the environment (Ernst et al., 2015).

Beside resource and capabilities mobilisation, BoP local firms can also enhance their internal processes for NPD success through team endeavours such as team creativity. Teams exchange of creative ideas aimed at providing solutions to problems are crucial for NPD success (Im & workman, 2004). Team's problem-solving creativity may drive new product success in BoP markets. In this sense social exchange theory may explain how different exchange relationships in the form of creative ideas and fresh thinking within the work team influence the NPD teams' creativity (Wang, Fang, Qureshi, & Janssen, 2015).

Overall, research interest in the BoP stems from the desire to fulfil both the needs of a considerable untapped market, as well as to improve living conditions of customers who have been traditionally excluded from the benefits of new products and economic participation (Nakata &

Antalis, 2015). Improving living conditions and fulfilling BoP consumer needs requires the active role and involvement of local firms in the provision of new products. Recent stories on the role of local firms indicate that local firms are engaging more in serving BoP markets (Dahlman & Kuznetsov, 2014). The locus of current research on the BoP has focused heavily on multinational companies from the developed world serving BoP customers (cf., Ernst et al., 2015; Schuster & Holtbrügge, 2014a; 2014b). However, it cannot be generalised if the findings of such like research focus can fully be applied to BoP markets since advanced markets in the developed world have fundamentally different market requirements and conditions. As such, research on NPD practices of BoP firms needs to develop and test context-specific theory to advance both theory and practice.

1.2 Research gaps and research questions

Reviewing the BoP literature hints essential NPD practices that should enable local BoP firms to operate more successfully in their BoP local markets: enriching their inter-organizational process such as widening their resource base and accumulating capabilities to develop new products, and collaborating with business customers and suppliers who are familiar with the BoP market conditions (Ansari et al., 2012; Schuster & Holtbrügge, 2014). The thesis identified and outlined the following five research gaps and research questions revolving around the NPD practice of local BoP manufacturing firms.

First, local firms cannot be successful in BoP markets with their existing resources only or deploying their resources in the same way (Linna, 2013; Cunha, Rego, Oliveira, Rosado, & Habib, 2014; Schuster & Holtbrügge, 2014b). They need a mechanism to develop or acquire new resources and the ability to deploy resources more effectively and efficiently. Recent literature highlights the importance of resource seeking and resource combination behaviours that firms adopt in creating new products (Pansera & Owen, 2015). According to the capability-based view firms can strengthen their capabilities and resource base (Weerawardena & Mavondo, 2011). They can do this via, for example, the recombination of the existing resources at hand to enhance product

innovativeness (Cunha et al., 2014; Senyard, Baker, Steffens, & Davidsson, 2014). Consequently, to address the issue of resource recombination a new concept (i.e., a capability) labelled ‘bricolage’ has emerged to explain how organisations innovate in resource-scarce environments (Baker & Nelson, 2005).

Some studies have demonstrated the benefit of bricolage as a capability (e.g., Ernst et al., 2015; Guo, Su, & Ahlstrom, 2016). Researchers have begun to examine bricolage as key antecedent to innovation outcomes (Pansera & Owen, 2015; Wu, Liu, & Zhang, 2017). Bricolage has been found to stimulate the level of innovativeness in resource-constrained new ventures in developed countries (Senyard et al., 2014). Others have argued that bricolage helps to solve problems by combining existing resources in new ways to develop solutions for highly price-conscious customers (Cunha et al., 2014). In this sense, it is a key driver of the firm’s ability to develop affordable products in BoP markets (Ernst et al., 2015). More recently, An, Zhao, Cao, Zhang, and Liu (2017) argue that bricolage could help firms to identify heterogeneous opportunities through which to promote corporate entrepreneurship. Bricolage may help to explain and predict the patterns of behaviour that firms with resource limitations follow to innovate (Baker & Nelson, 2005; Senyard et al., 2014). Overall, these studies highlight the need for bricolage capability that may facilitate NPD processes and enable firms to survive and even grow through recombining and reusing of resources at hand to solve NPD problems.

However, while providing initial positive upsides, successive recombination of resources may not be as helpful to innovative activities. Hence, the benefit of bricolage in NPD may not continue indefinitely, but diminishes after a certain point. This leads to the need to acknowledge addressing the meta-principle of too-much-of-a-good-thing is ultimately bad (Pierce & Aguinis, 2011). Senyard et al. (2014) in their study provide a valuable insight on resource reconstruction behaviour of new ventures from a developed country’s (advanced market) context. They argue that while resource constrained firms may need to use bricolage to innovate, there may not only

be declining marginal returns to the positive effects of bricolage, but also, at higher levels of bricolage its benefit for product innovativeness gradually starts declining, and shows negative marginal returns. Given BoP firms are characterised by resource challenge this part of Senyard et al.'s work can be translated in BoP context. Nonetheless, Senyard et al. (2014) fail to empirically validate the inverse effects for high levels of bricolage on innovativeness.

Therefore, in pursuing the issue of diminishing return of bricolage, local firms in BoP need to acquire additional resources to proceed with their innovation. Drawing on social capital theory, another stream of research suggests that firms can find ways to pool or draw on additional resources to strengthen their capabilities to innovate (Acquaah, 2007; Baker et al., 2016). One path for this to occur may be through social relationships. For BoP firms, this is a high possibility because BoP markets (i.e., markets in Sub Saharan African countries such as Ethiopia, Ghana, and Kenya) function within strong social relationships and strong collectivist cultures (Acquaah, 2007). Consideration of social ties is important because of their potential influence on innovation (Boso, Story, & Cadogan, 2013). Firms' creation of social ties can bridge resource gaps and create opportunities to acquire knowledge of local market and impending governmental regulations (Wang & Chung, 2013). This study takes the view that with greater social ties firms may better identify routes towards accessing resources (e.g., financial resources and market knowledge). Therefore, higher levels of social ties can underpin and facilitate firms' product innovativeness. Based on the above theoretical foundation the study posits the following research question (*RQ*):

RQ 1: (a) To what extent does bricolage capability enhance product innovativeness at the BoP for local manufacturing firms? And (b) to what extent do social ties attenuate the inverted U shape bricolage capability - product innovativeness relationship at the BoP for local manufacturing firms?

Second, in BoP markets, both the creation and delivery of value to prospective customers and acquire a competitive advantage is of prime importance (Londhe, 2014). Local manufacturing firms who pursue the creation and delivery of superior customer value need to focus heavily on providing products that customers perceive as valuable, suggesting the crucial role of value in new product success (Dey et al., 2016).

Reibstein, Day, and Wind (2009) highlighted how marketing provides the best pathways for innovation that create value for customers. To this end, the role of marketing capabilities to respond to the current customer demand and competitors actions in realising product success has received substantial literature attention (e.g., Acquaah & Agyapong, 2015; Ngo & O'Cass, 2012; Su, Tsang, & Peng, 2009). Leveraging existing marketing capabilities would enable firms to better exploit the opportunities in the BoP market conditions in order to deliver value and enhance their performance (Webb et al., 2011). Local BoP firms with superior marketing capabilities can familiarise themselves with the market and understand the activities of key competitors that helps them to deliver value (Acquaah & Agyapong, 2015). While BoP markets are characterised as the one-to-one interaction between firms and local consumers (Mason & Chakrabarti, 2017), the current literature provides little evidence about the extent BoP firms' marketing capabilities elevate the effect of product innovativeness on customer value. Based on the above theoretical foundation the study posits the following research question:

RQ 2: (a) To what extent does product innovativeness influence customer value at the BoP for local manufacturing firms? And (b) to what extent do marketing capabilities enhance the relationship between product innovativeness and customer value at the BoP for local manufacturing firms?

Third, alongside resource and capability mobilisation, local BoP firms' success can be strengthened by improving their NPD internal processes through team endeavours. For example, NPD team's ability to provide cost-effective and novel solutions (i.e., teams' problem-solving creativity) may direct customers perceive the product offering as possessing value and meets their needs (Atuahene-Gima & Wei, 2011). Offering value and achieving superior new product performance requires identifying team attributes and contextual factors (Im & workman, 2004). In pursuit of deepening this understanding researchers have explored potential factors that may affect team's problem-solving creativity in the space of NPD (see Carmeli, Gelbard, & Reiter-Palmon, 2013; Reiter-Palmon & Illies, 2004; Tse, To, & Chiu, 2017). These factors can be enablers of and/or barriers to teams' problem-solving creativity. One of the potential but neglected job-related factors is role ambiguity (Coelho, Augusto, & Lages, 2011).

A significant contextual factor that induces role ambiguity in the workplace is organisational change. It has been observed that increasingly more BoP firms are facilitating organisational changes to remain competitive (Stifel, Minten, & Tamiru, 2012). However, organisational change may indirectly affect workplace behaviours through various stressors, such as increased workload and role ambiguity (Baillien & De Witte, 2009).

Because of changes and uncertainties in BoP firms, NPD managers can face greater levels of uncertainty in their jobs which results in a lack of clarity in their roles. In this environment, detrimental effects coming from role ambiguity on creative behaviours is likely to be a common issue among BoP manufacturing firms (Beyene, Shi, & Wu, 2016). This could be due to country culture, and the way firm managers manage their employees (Peterson et al., 1995). For example in BoP cultures (countries), there is high power distance - that gives managers significant power and control over subordinates. BoP countries are also high in collectivism- indicating a value system that prioritises the needs of the group over the individual (Peterson et al., 1995). These cultural issues propagate ambiguity in roles (Kirkman, Lowe, & Gibson, 2006). When role

ambiguity is significant, team managers' encounter difficulties in performing tasks and it is likely that both individual and team efforts towards providing solutions will suffer (Peterson et al., 1995; Beauchamp, Bray, Eys, & Carron, 2005; Probst & Lawler, 2006). To overcome this potential downside of role ambiguity, leaders can provide clearer perspectives on tasks to managers (subordinates), thus allowing for team creativity. Nowadays there is a growing notion in which leaders integrate both transactional and transformational leadership (called ambidextrous leadership) to complement each other (Cunha, Fortes, Gomes, Rego, & Rodrigues, 2016; Luo, Zheng, Ji, & Liang, 2016). Ambidextrous leadership may curb the detrimental effects of role ambiguity on teams' problem-solving creativity for new product success. As such, drawing on social exchange theory the study takes the view that new product success can be ensured through team's creative endeavours that are driven by interdependent team members' social exchanges of creative ideas and fresh thinking in a reciprocal relationship. However, the research to date has tended to focus on drivers and outcomes of individual creativity (Carmeli, Gelbard, & Reiter-Palmon, 2013; Im & workman, 2004) and not addressed crucial contextual factors that inhibit or facilitate team creativity and performance. Based on the above theoretical foundation the study posits the following research question:

RQ 3: (a) To what extent does problem-solving creativity enhance new product performance at the BoP for local manufacturing firms? (b) To what extent does role ambiguity influence problem-solving creativity at the BoP for local manufacturing firms? And (c) to what extent does ambidextrous leadership neutralise the detrimental effects of role ambiguity on problem-solving creativity at the BoP for local manufacturing firms?

Fourth, BoP local firms can strengthen NPD activities and achieve product advantage to direct customer value and new product performance by integrating external resources (such as

market knowledge and familiarity) in the firm's NPD processes. Research has explored innovation benefits of collaboration with customers and suppliers (e.g., Baker, Grinstein, & Harmancioglu, 2016; Lau, 2011). Tsai (2009) argues that customers and suppliers collaboration can be enhanced for better innovation and performance through learning that occurs through collaboration. Customers and suppliers are an important source of knowledge in the process of NPD to understand consumer needs and reduce product inadequacies to make NPD processes more efficient (Brettel & Cleven, 2011). However, these studies may not be generalisable to the BoP because there are significant differences among contexts in terms of economy, socio-politics, culture, and institutions. Local BoP firms do not possess all the required resources to develop value-laden affordable products (Agnihotri, 2015). Specifically, research shows that collaboration with business customers and suppliers can act as a bridge to access resources and bypass institutional challenges is vital (Jenkins, Ishikawa, Barthes, & Giacomelli, 2008). Institutional theory outlines that collaboration with external partners is essential, especially in coping with challenges in the BoP market such as geographical isolation, poor to non-existence infrastructure, institutional constraints, and inadequate market-supporting institutions (Ernst et al., 2015; Reficco & Márquez, 2012). Despite its significant benefit to enhance NPD, no study has explored collaboration as a source of advantage in BoP markets to drive performance. Based on the above theoretical foundation the study posits the following research question:

RQ 4: (a) To what extent do customers and suppliers collaboration enhance new product advantage at the BoP for local manufacturing firms? And (b) to what extent does new product advantage contribute to affordability and new product performance at the BoP for local manufacturing firms?

Fifth, the external environment often impacts local BoP firms' opportunities for and constraints on NPD activities (Schuster & Holtbrügge, 2014b). Successful NPD practice requires a proactive focus on the external environment (Tsai & Yang, 2013). Environmental factors might have the potential to influence the NPD performance (Kibbeling, der Bij, & Weele, 2013). Marketing and NPD literature have identified the environment as one of the key factors for understanding organisational behaviours (Kim & Atuahene-Gima, 2010). Environmental factors can have a significant impact on the effectiveness of the strategic efforts of firms to achieve new product success (Tsai & Yang, 2013). The study takes the view that collaboration to drive product advantage in BoP markets is contingent upon ongoing changes in BoP firms. Based on the above theoretical foundation the study posits the following research question:

RQ 5: (a) To what extent does market turbulence moderate the relationship between customers and suppliers collaboration and new product advantage at the BoP for local firms? And (b) to what extent does competitive intensity moderate the relationship between product advantage and new product advantage and new product performance?

1.3 Contribution

Drawing on the capability based view (Weerawardena & Mavondo, 2011), social capital (Acquaah, 2007; Baker et al., 2016), social exchange theory (Cropanzano & Mitchell, 2005) and institutional theory (Webb et al., 2011), the study proposes a fine-grained model that portrays how four different theories help to illustrate the intra and extra organisational factors that support NPD practice in local BoP firms (see Figure 1.1). To address the identified gaps and research questions, the thesis makes the following contributions to the literature.

First, the thesis advances the capability based view of the firm by unlocking the diminishing effect of organisational bricolage on product innovativeness in BoP markets. Research on

bricolage in BoP markets with their unique characteristics have been largely ignored (Halme, Lindeman, & Linna, 2012; Linna, 2013) as the focus of research in this domain has mainly been on developed countries (advanced markets) and firms operating in or emanating from such countries (see Baker & Nelson, 2005; Ferneley & Bell, 2006; Senyard et al., 2014).

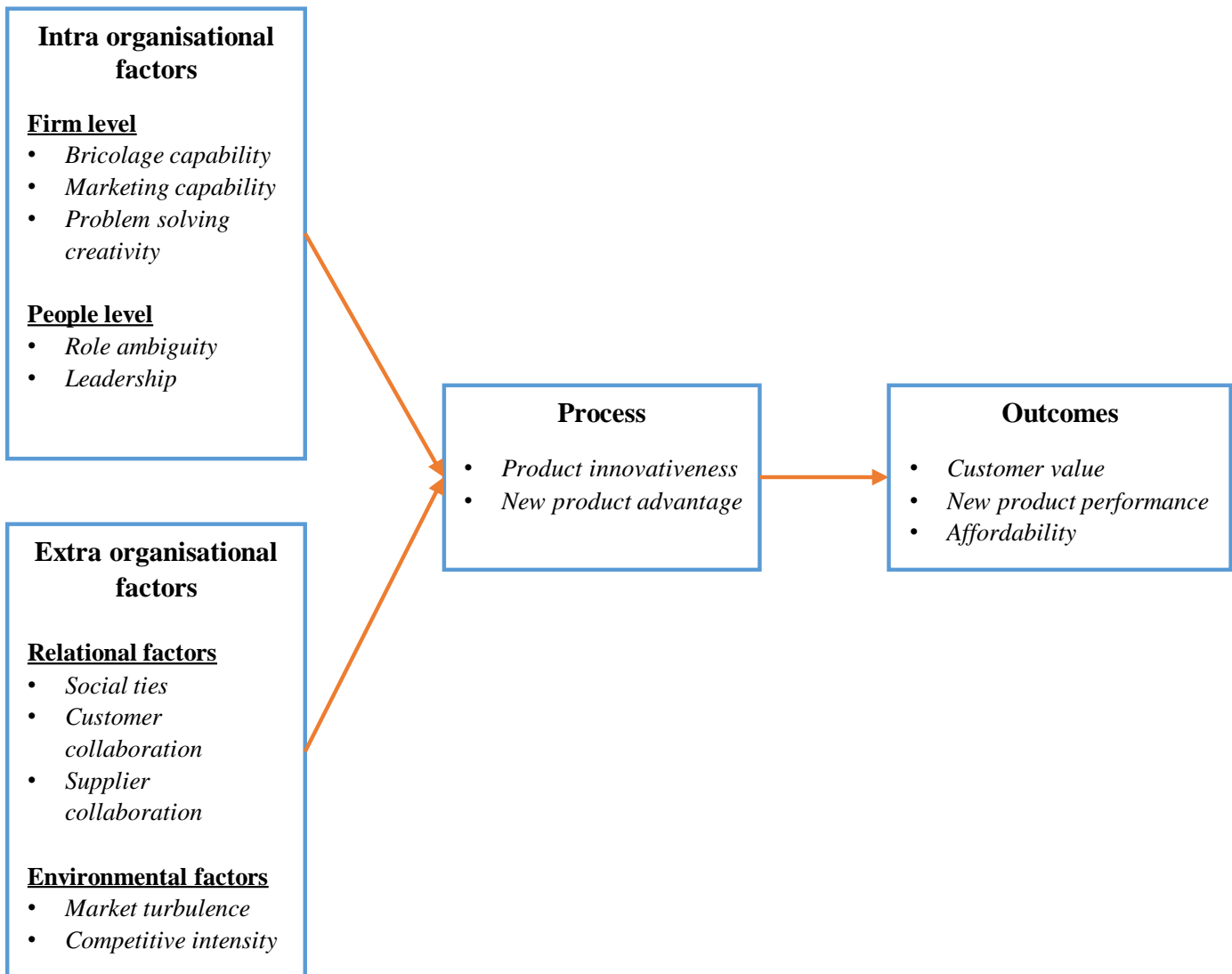
Second, the study advances the literature on social capital by illustrating that in BoP markets ties with civil society organisations and government organisations function in different ways. In fact, the study reveals the crucial influence of social ties for BoP firms operating in BoP markets in helping to attenuate the inverted U-shape association between bricolage and product innovativeness. Further, the thesis engenders understanding of the conditions under which product innovativeness can be translated into greater customer value at the BoP through manufacturers marketing.

Third, relying on the social exchange theory that describes work-related attitudes and team workplace behaviours to clarify how role ambiguity inhabits problem-solving creativity. The thesis further demonstrates the effects of ambidextrous leadership as a useful approach in minimising role ambiguity's effect on team creativity and performance outcomes. The study provides a richer understanding on how NPD team's problem-solving creativity engenders new product performance in BoP markets. Specifically, the thesis contributes to practice by showing how Ethiopian manufacturing firms benefit from ambidextrous leaders in providing an environment supporting NPD teams to develop solutions for customers' problems through new products. The role of leaders in these firms is important because they are more powerful and less democratic than leaders in firms based in developed countries (Casimir & Waldman, 2007; Muchiri, 2011).

Fourth, to gain product advantages in an institutionally different market context, firms need to identify institutional environments that may influence firm decision making through various mechanisms, which result in the firms' NPD strategic responses aimed at coping with the

institutional challenges they perceive (Webb et al., 2011 ; Yang & Su, 2014). The thesis advances institutional theory by examining the influence of customers and suppliers collaboration to understand how affordability and new product performance can be achieved in the BoP market. Collaborative arrangements and new product outcomes in BoP markets are likely to be impacted by both industry and market conditions. As such, the thesis advances the view that the positive effect of collaboration on new product advantage is contingent upon ongoing changes in BoP markets. The thesis extends the current literature on BoP by exploring market turbulence and competitive intensity as a contingent marketplace characteristic impacting collaborations effect on creating new product advantage to drive new affordability and new product advantage.

Figure 1.1 Conceptual framework of the thesis



1.4 Research context: Ethiopian local manufacturing firms

Given the study framework relies on supporting customer value creation and new product success in local BoP manufacturing firms, the choice and emphasis on a BoP market context was crucial. Further, the vital role of BoP economies in the global economy has recently encouraged scholars to shift their focus beyond the developed economy context (Nakata & Weidner, 2012; Viswanathan & Sridharan 2012). As argued by Acquaah (2007), the unique context of BoP economies, particularly in the Sub sub-Sahara Africa region with countries transforming to

market-driven economies are not well studied (Acquaah, 2010; Boso et al., 2013). A BoP country within sub-Saharan Africa that is recognised for its sustained economic growth with average annual GDP growth of 10.9 % for the last two decades is Ethiopia (Chakrabarty, 2016). The Addis Ababa chamber of commerce in its 2015 study shows that Ethiopia's manufacturing sector is among the key productive sectors of the economy recognised under the development plan 2010-2015 which can bring economic growth and development because of its potential for wealth creation, employment generation, and poverty alleviation. Overall, the manufacturing sector makes a significant contribution to the Ethiopian economy, for example, 2012-2013 period the sector created job opportunities for 173,000 people.

Regarding the market structure, most products manufactured by local firms are marketed to the local market. In recognition of the role of local manufacturing firms since the early 2000s, the government has formulated and implemented an innovation policy (Gebreeyesus, 2013). The crucial role of innovation policy has been recognised as a basis to transform the Ethiopian economy from largely agrarian to an industrialised economy and is driving economic liberalisation in the country.

With economic liberalisation, competition has also intensified, and local manufacturing firms are now not only competing with their existing local competitors, but are also competing against an increasing number of foreign firms entering the Ethiopia BoP market. Therefore, Ethiopia is found to be an ideal study context to study how local manufacturing firms operating in an increasingly competitive market can use innovation to create customer value and enhance their product success.

1.5 Data collection

The data for this study were collected from Ethiopian manufacturing firms and their business customers. The study identified firms from a database provided by the Addis Ababa Chamber of

Commerce. The study involved various industries including food, footwear, plastic, detergent, health and beauty, and garment and textile. The selected firms were engaged in manufacturing physical products. Firms who employed more than 30 employees and had been in operation for at least five years were included. Corresponding customers with at least three years business relationships the manufacturing firms were also included in the sample.

For the three studies, data collection took place during April – December, 2016. The drop and collect (i.e., hand deliveries) technique was employed for all data collection across the studies. Drop and collect has been a popular technique in sub-Saharan Africa countries where issues with poor infrastructure and the unreliable postal systems have been noted and where personal contacts are vital for information exchange (Acquaah, 2007; Boso et al., 2013).

To reduce informant bias, the study followed a multi-respondent approach including three managerial positions (CEOs, marketing managers and NPD managers) and business customers across the studies. CEOs are able to evaluate the performance of the new products and other environmental control variables since they are more knowledgeable about these broader and more strategic aspects of NPD. In contrast marketing and new product managers or team members are more knowledgeable about the relevant day-to-day and process-related details and can thus assess these issues with high levels of reliability. The use of multiple informant research designs helped to minimise common method bias concerns (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Informants were evaluated for their competence on two key areas by asking about their knowledge about their firms' business operations, strategies, and business environment; and their knowledge and competence to complete the questionnaire. The results of the studies ensured that informants were knowledgeable about the issues under examination and had strong confidence in the accuracy of the answers provided. All three studies relied on measures that had been suggested and validated in the literature. Specifically, some of the items were adapted from previous studies by making

changes to wording to better fit the Ethiopian BoP context. A summary and overview of each paper is outlined below.

1.6 A synopsis of papers

Paper one. *Do bottom of the pyramid manufacturing firms with bricolage capabilities and social capital deliver superior value to their customers?*

The first study provides greater understanding about how firms can maximise their resources to create value for customers. To provide answers and enhance understanding on value creation a theoretical framework is developed. It is argued that one path for BoP firms to pursue value creation may be through what is now referred to as bricolage (Linna, 2013). Firms with bricolage capabilities may be able to optimise the application of their limited resources to produce innovative products and create value for customers (An et al., 2017). Acknowledging the lack of empirical evidence supporting the diminishing marginal return of bricolage, this paper investigates the role of bricolage capability in enhancing product innovativeness to en route customer value at the BoP firms. The study identifies the moderating role of social ties and marketing capabilities on the relationships between bricolage capability, product innovativeness, and customer value.

Underpinned by the capability-based view and social capital theory the study shows that bricolage capability offers benefits in supporting product innovativeness to a certain point, and after that point, the benefit of bricolage diminishes. Nevertheless, the diminishing return from bricolage capability can be enhanced by leveraging social ties with civil society organisations. The study shows that product innovativeness performs a critical role in value creation and that marketing as a complementary skill is needed to engage deeply with BoP customers. Details of the study are discussed in chapter 2. This version of the paper is currently under 2nd round review at Industrial Marketing Management Journal [A* in ABDC].

Paper two. *When does new product development team problem solving creativity in bottom of the pyramid firms' pay off?*

The literature embraces problem-solving creativity as a tool for successful NPD practice and studies hint that there might be a critical linkage connecting intra organisational factors and new product performance (Atuahene-Gima & Wei, 2011; Carmeli et al., 2013). However, no study has empirically tested this relationship in BoP context. To address this gap, this second study underpinned by social exchange theory provides an explanation on i) the effects of problem-solving creativity on new product performance, and ii) the detrimental effect of role ambiguity on problem-solving and moderating effect of ambidextrous leadership to curb this negative relationship.

The results provide support for the study's predictions that NPD team's problem-solving creativity positively affects a firm's new product performance. The negative effects of NPD manager's role ambiguity can be buffered through the role of CEO's ambidextrous leadership. . Details of the study are discussed in chapter 3. This paper is under review at the Journal of Business Research [A in ABDC].

Paper three. *Leveraging local manufacturers' ability to offer affordable products and enhance new product performance in bottom of the pyramid markets*

In recent years, an increasing number of firms have attempted to tap into the knowledge, skills, and interests of their customers and suppliers to develop new products. To date, academic research has focused on collaboration in general for established firms' NPD in developed countries (cf. Baker et al., 2016; Foss, Laursen, & Pedersen, 2011). However, findings are inconsistent regarding the effects of collaboration on NPD outcomes such as new product advantages (Tsai, 2009). As a result, one cannot demonstrate conclusively whether the findings of previous studies can be effectively applied in the BoP context (Schuster & Holtbrügge, 2014a). This paper tests a

conceptual framework of customers and suppliers collaboration as drivers of positional advantage en route to affordability and new product performance in BoP markets.

First, underpinned by social capital and institutional theory, the results show that collaboration with customers and suppliers plays a pivotal role in gaining new product advantage in BoP. More specifically the findings show that collaboration with customers and suppliers is a source of advantage (in terms of cost-efficiency and differentiation) and a critical determinant of new product success. Second, the study demonstrates that the effectiveness of NPD collaborations in BoP markets is contingent upon environmental factors such as market turbulence and competitive intensity. Details of the study are discussed in chapter 4. This paper is currently under review at the European Journal of marketing. [A* in ABDC].

1.7 Terms and definitions

This section provides definitions for the key terms that are frequently used in this thesis. The descriptions below contain common definitions in current literature and adopted for the present research context.

Table 1.1 Construct definitions & terms

CONSTRUCT	DEFINITION
Bricolage	the organisational capability directed toward combining available resources creatively to exploit market opportunities
Ties with civil society organisation	non-state and non-market organisations in which people organise themselves to advocate and share interests in the public domain
Ties with government	networks with officials who are working in government functionaries where the activities of government administration are performed.
Product innovativeness	the perceived newness, novelty, originality, or uniqueness of a product

Marketing capabilities	the bundles of interrelated routines, processes, or skills firms engage in specified marketing related activities in areas such as pricing, product, distribution, marketing communication, selling, and marketing planning relative to their competitors
Customer value	the difference between the total utilities customers obtain from a product and the total costs they pay
Role ambiguity	the perceived lack of information about what is expected from a subordinate (e.g., manager, employee) to perform his or her role accurately
Ambidextrous leadership	the integration of transformational and transactional leadership styles to complement each other
Problem-solving creativity	the ability of the NPD team members to discover and implement novel and cost-effective solutions
New product performance	the degree to which the firm achieves its goals for revenue, sales volume, market share, sales growth, and profitability for its new product
Collaboration	the extent to which a firm involves customers (suppliers) in its NPD activities
Market turbulence	the degree of change in customer preference for products in an industry
New product advantage	the degree to which a product offering is superior to competing products regarding features and affordability
Competitive intensity	the degree of competition in an industry
Affordability	the challenge of selling a product or service at an affordable price

1.8 Outline of the thesis

This thesis includes five chapters. Chapter 1 constitutes the research background, and provides the overall aim and gaps of the research, research questions, contribution and summary of each of the chapters. Chapter 2 provides understanding on how firms can maximise their resources to create value for customers and explores the interplay between social ties and organisational capability to enhance product innovativeness. Chapter 3 clarifies how and why problem-solving creativity

matters in NPD by indicating job-related behaviours (i.e., role ambiguity and ambidextrous leadership) as antecedents and moderators that promote or inhibit team creativity. Chapter 4 provides clarification on the evolving debate on the role of customers and suppliers collaboration in BoP in enhancing new product advantage leading to superior affordability and new product performance. Chapter 5 provides a summary of the findings, the conclusion, the research limitations, the implications of the results, and recommendations for future research.

1.9 Conclusion

Value creation and product success are major challenges for local BoP manufacturing firms. As such, the need for appropriate guidance on NPD practices has become the top priority in BoP markets (Schuster & Holtbrügge, 2014b). The purpose of the thesis was to examine the effects of intra and extra organisational factors on value creation and product success at the BoP local manufacturing firms. Thus, this chapter provided the background information and research gaps of the thesis followed by the justification of the context of the study and data collection. The relevant literature surrounding the topic was then discussed, and key research questions were developed, and related research aims were outlined. Next, synopsis of the papers was provided, and the definitions of the key constructs were presented. Finally, the chapter provided the outline of the study. Paper one will be presented in the following chapter.

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Chapter 2

Do bottom of the pyramid manufacturing firms with bricolage capabilities and social capital deliver superior value to their customers?

Under 2nd round review at the Industrial Marketing Management

Abstract

Firms originating in BoP markets face challenges to create value for customers through product innovation. Operating in resource-constrained environments, BoP firms must be able to leverage their limited resources to create value for customers and achieve product innovation success. Addressing resource challenges and value creation through product innovation in BoP markets may be resolved through the ability to combine available resources creatively, called bricolage. To test our proposition, we applied the capability based view of the firm and social capital theory. We collected data from three informants in Ethiopian local BoP manufacturers and their customers. Our data shows that bricolage has an inverted-U shape relationship with product innovativeness. We also show that social ties with civil society organisations attenuates this effect. However, contrary to our prediction, the inverted U-shape relationship becomes more negative as ties with government increases. Furthermore, our results underscore the contingency role of BoP firms' marketing capabilities in translating product innovativeness into customer value.

Keywords: bottom of the pyramid, bricolage, innovation, marketing capabilities, value

2.1 Introduction

Creating value for the consumer at the Bottom of the Pyramid (BoP) is a social obligation, yet meeting such an obligation is challenging. BoP markets are environments where local firms have limited access to resources and possess less developed capabilities and face significant challenges in their operating environments (Nakata & Weidner, 2012)¹. Resource constraints are not just the problem of firms operating in BoP markets. Customers in these markets also face significant challenges because of their low incomes, limited spending power, and low living standards (Mason & Chakrabarti, 2017; Viswanathan & Sridharan, 2012).

Under such conditions, both local firms and their customers face challenges because of their resource constraints, and therefore local BoP firms have to understand how to manage their limited resources to create value laden products that appeal to their customers and improve their lives (Cunha, Rego, Oliveira, Rosado, & Habib, 2014). Limited spending power coupled with low living standards increases the demand for products that have both affordability and quality (Viswanathan, Echambadi, Venugopal, & Sridharan, 2014; Chikweche & Fletcher, 2012). Customer value here is defined as the difference between the total utilities customers obtain from a product and the total costs they pay (Dey et al., 2016).

While literature acknowledges that resource constraints are the main issue in BoP markets, we still do not know how BoP firms can maximise their resources to create value for customers (Linna, 2013). One path for BoP firms to pursue value creation may be through what is now referred to as bricolage. Firms with bricolage capabilities try to optimise the application of their limited resources to produce innovative products and create value for customers (Cunha et al., 2014; Halme, Lindeman, & Linna, 2012). Bricolage is defined as the organisational capability directed toward combining available resources creatively to exploit market opportunities (see

¹ In-text citations and reference lists are presented based on the guidelines of the Industrial Marketing Management Journal.

Baker & Nelson, 2005). Firms with higher levels of bricolage capability can recombine and restructure their limited resource over and over to develop products with innovative features (Salunke, Weerawardena, & McColl-Kennedy, 2013). However, over time the firm may reach a point that recombination of resources may not improve product innovativeness because the firm has tried all available combinations of resources. Ultimately, the recombination of resources do not help create new products or add new feature to the current products. Thus, the positive effect of bricolage capability on product innovativeness diminishes. However, research to-date has failed to support the diminishing return of bricolage on product innovativeness (Halme et al., 2012; Linna, 2013). Product innovativeness is defined as “the perceived newness, novelty, originality, or uniqueness of a product” (Kim, Kim, Garrett, & Jung, 2015, p. 202).

If we accept that bricolage has a diminishing effect on product innovativeness, BoP firms that suffer from resource scarcity may be able to increase the returns to their bricolage capabilities by leveraging social ties with government bodies and civil society organisations who are key stakeholders in BoP markets. Social ties may help to gain preferential access to valuable market information and resources to develop innovative products that assist in developing affordable and quality products (Acquaah & Eshun, 2010). Social ties refer to the social interactions of a firm with other members of a network, which involves exchanges of views and resources (Boso, Story, & Cadogan, 2013). Civil society organisations are non-state and non-market organisations in which people organise themselves to advocate and share interests in the public domain (Perrot, & Rivera-Santos, 2012; Schuster & Holtbrügge, 2014a). Ties with government are reflected in networks with officials who are working in government functionaries where the activities of government administration are performed (Wang & Chung, 2013).

Resource scarcity coupled with poor infrastructure, rudimentary distribution channels, and communication difficulties also create challenges for BoP firms to market their innovative products (Mason & Chakrabarti, 2017). Under this constrained condition, BoP firms need an

effective marketing capability tailored to the existing local conditions to be able to communicate the value of their products and availability of their products to customers (Chikweche & Fletcher, 2012; Ireland, 2008). When a BoP firm possess effective marketing capabilities, it helps customers access, acquire, and use its new products with uninterrupted supply (Prahalad, 2012). Further, it will be able to communicate advantages of new products with customers and position itself in the market. While, BoP markets are characterised as the one-to-one interaction between firms and local consumers (Mason & Chakrabarti, 2017), current literature provides little evidence about the extent BoP firms marketing capabilities elevate the effect of product innovativeness on customer value.

In drawing on recent literature highlighting a range of challenges facing BoP firms, we² develop a research model outlined in Figure 2.1. With our proposed model, we rely on the capability based view of the firm to address the extent that bricolage helps BoP firm address resource challenges and limitations to innovatively deliver value-laden products to their local BoP customers. Our theory enacts the view that ‘too much of a good thing’ is ultimately bad (Pierce & Aguinis, 2011). We argue that there is a diminishing return (marginal benefits) to the outcomes from engaging in greater levels of bricolage in BoP firms and propose an inverse U-shape relationship between bricolage and product innovativeness. In addressing how best to manage bricolage, we build on social capital theory and argue social ties will help BoP firm access additional resources to negate the diminishing returns from bricolage to product innovativeness (Andersen, 2008). We also develop arguments emphasising marketing capabilities contribution to the delivery of extra value to customers in conjunction with product innovativeness (Boso, Adeola, Danso, & Assadinia, 2017).

² The use of pronoun “we” in the thesis is to acknowledge the contribution of the supervisory team as was in the papers submitted to journals.

Using dual data from 150 manufacturing firms and their customer firms (i.e. retailers) in Ethiopia, we contribute to the discussion about how local BoP manufacturers can deliver superior value in terms of affordability and quality products to their customers. Our contributions are three-fold. First, we advance the capability based view of the firm by unlocking the diminishing effect of organisational bricolage, on product innovativeness in BoP markets. Research on bricolage in BoP markets with their unique characteristics have been largely neglected (Nakata, 2012; Linna, 2013) as the focus of research in this domain has mainly been on developed countries (advanced markets) and firms operating in or emanating from such countries (see Baker & Nelson, 2005; Ferneley & Bell, 2006; Senyard et al., 2014). Further, studies in developing countries have failed to support the diminishing effect of bricolage on product innovativeness (Halme et al., 2012; Linna, 2013). Second, we advance the literature on social capital theory by showing in BoP markets ties with civil organisations and government organisation function in different ways. We view social ties as a boundary condition which may reverse the marginal benefits of bricolage. In fact, we reveal the crucial influence of social ties for BoP firms operating in BoP markets in helping to attenuate the inverted U-shape association between bricolage and product innovativeness. Third, focusing on poor infrastructure in BoP markets, we enhance understanding of the conditions under which product innovativeness can be translated into greater customer value at the BoP through manufacturers marketing capabilities.

2.2 Theoretical framework

While resource possession is a critical issue for firms operating in uncertain environments (Li & Zhang, 2007), resource deployment through organisational capabilities has been identified as being more critical (Feng, Morgan, & Rego, 2017). Underpinned by this logic, bricolage has emerged as a key capability to create superior value for customers through improving product innovativeness (Baker & Ted, 2007; Cunha et al., 2014; Halme et al., 2012). Bricolage is premised

on the view that firms may combine existing product-level resources in creative ways to solve new product problems in price sensitive, value-seeking markets (Cunha et al., 2014). The value creation characteristic of bricolage rests on its ability to allow a firm to creatively recombine available resource to deliver superior value to customers (e.g., Amit & Han, 2017; Gruber et al., 2010). In resource-constrained firms when key assets are absent, managers cannot rely only on standard resources to enhance product innovativeness, but may capitalise on bricolage to construct new resource combinations to deliver superior value to customers (Wu et al., 2017). Delivering superior value to customers allows firms to maintain and even enhance their position in the market (Haas, Snehota, & Corsaro, 2012; Ngo & O'Cass 2009; O'Cass & Ngo, 2012; O'Cass & Sok, 2013).

While the research on bricolage supports its positive effect on product innovativeness (Sunduramurthy, Zheng, Musteen, Francis, & Rhyne, 2016), a new stream of research draws attention to possible negative effects of bricolage in product innovation. Cunha et al., (2014) argue there is a possibility that higher levels of bricolage may undermine product innovativeness. However, their study is limited to reviewing literature and deductions rather than empirical research. Follow up research on the debate around curvilinear effects of bricolage on innovativeness have not reached consensus. For example, Senyard et al. (2014) theorise that “while resource-constrained firms may need to use bricolage to innovate, there may not only be declining marginal returns to the positive effects of bricolage but also, at higher levels of bricolage, negative marginal returns” (p. 216). However, their results did not fully support this view and they failed to show an inverted-U-shape relationship between product innovativeness, process innovativeness, marketing innovativeness and bricolage. Interestingly, Wu et al. (2017) successfully show that bricolage has an inverted U-shape relationship with new product creativity. They report that engaging in high levels or “too much bricolage will reduce resource novelty from locally constructed networks and the chance of further successful recombining of new and old

resources” (p. 129). The different findings might be due to consideration of different outcomes (i.e., new product performance, new product speed & creativity and opportunity identification) and resource requirements (i.e., material, labour, and skills). Consideration may need to be given that some outcomes may be more vulnerable to diversity of resources and knowledge rather than the combination of heterogeneous resources. Wu et al. (2017) argue new product creativity (the outcome of bricolage) requires diverse knowledge and when the firm has no access to new knowledge the effect of bricolage on creativity diminishes.

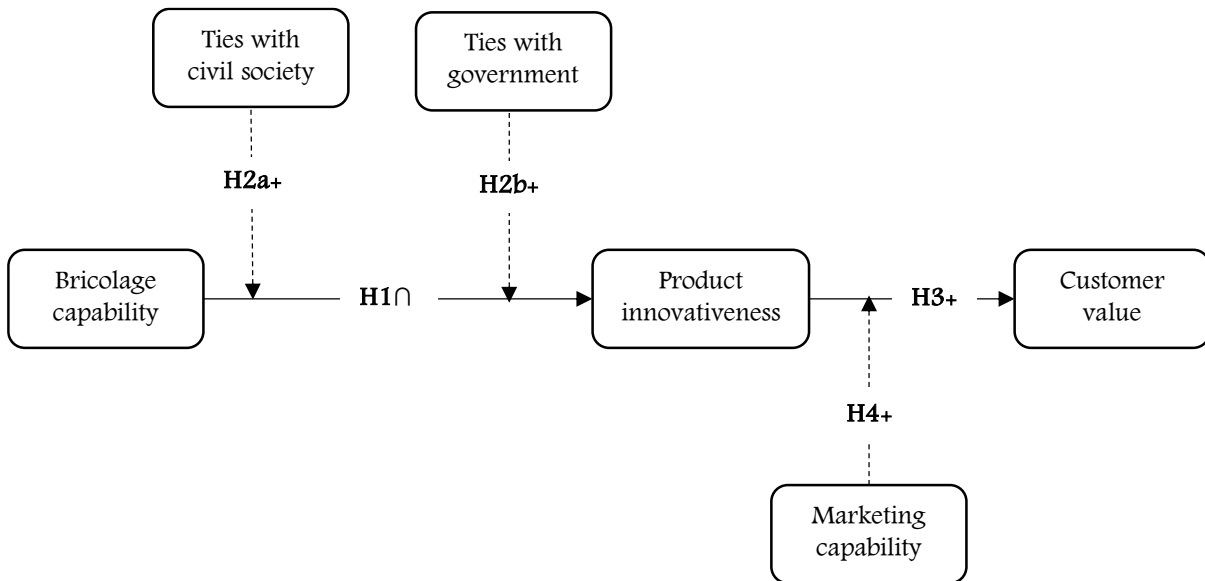
Cunha et al. (2014) suggest the first test to a theory of product innovation in resource-poor contexts is to explore when resource constraints might influence product innovation positively. Subsequently, research has sought to identify contingencies that may affect the relationship between bricolage generated innovation outcomes or prerequisites of innovation. In this domain, Wu et al. (2017) seek to understand if technological turbulence may flatten the curvilinear relationship between bricolage and new product creativity. However, their study did not reach to any positive conclusion on this specific point. Other studies seek to unlock the relationship between bricolage and opportunity identification and finding the effect of bricolage on innovation opportunity is higher when learning orientation is present (An et al., 2017). Interestingly, research on identifying when bricolage positively drives innovation is scant (Cunha et al., 2014).

Prior studies on bricolage suggest the presence of social ties with business network fosters bricolage (Baker & Nelson, 2005). Different types of social ties (e.g., political, business) may affect organisational processes and innovation outcomes differently (Wang & Chung, 2013). Specifically, attention has been directed to the contingency impact of social ties on resource configurations and exploitation processes in resource-constrained business environments (e.g., Heirati & O’Cass, 2016). Social ties are identified as valuable in product innovativeness and

customer value creation because of their influence in market-oriented activities and access to extra resources (Ansari, Munir, & Gregg, 2012; Baker et al., 2015; Dey et al., 2016; Merlo et al., 2006).

It has been identified that specific components of external ties provide valuable learning experiences for firms (Acquaah, 2007; Baker et al., 2015). Social ties can include networks with suppliers, buyers, competitors, governments, and community-related entities (Wu, 2011). Social ties may facilitate NPD by providing market, and technological knowledge (Ansari et al., 2012). For example, Baker et al. (2015) suggest that learning through effective exploitation of external ties and networks may improve innovation because ties facilitate rapid response to market dynamics. In the same vein, Boso et al. (2013) explain that in developing countries where resource scarcity is a significant problem to boost innovation, ties augment the outcomes of market and entrepreneurial orientations on new products. They argue that possessing strong ties prepare manufacturers for market and regulation changes that may interrupt firm performance. This argument is supported by other studies which show in resources scarce environments, such as BoP markets, ties improve business performance by helping firms to face resource management challenges (see Acquaah, 2007; Kebede & Butterfield, 2009). Among different types of ties, it appears ties with government and civil society organisations may be advantageous to BoP firms' NPD projects (Schuster & Holtbrügge, 2014a). Governments have been recognised as key influencers of business policies and infrastructure within BoP markets. At the same time, civil society organisations have been widely acknowledged as the closest entities to BoP citizens (Schuster & Holtbrügge, 2014a).

Figure 2.1 Conceptual framework



2.3 Bricolage and product innovativeness

Previous studies have shown that bricolage has direct effects on product innovation (Ferneley & Bell, 2006). However, we still do not know the extent that the effect of bricolage on innovation changes or is constant (Senyard et al., 2014; Wu et al., 2017). Building on Wu et al. (2017) and Senyard et al. (2014), we argue the chance of creating more novel combinations from the same sets of resources diminishes because options or possibilities to constantly deploy the same resources in new ways is finite and thus less novelty can be achieved or created. We propose in BoP market there is an inverted U-shape relationship between bricolage and innovativeness. This sets the context as a key issue and a point that prior research has not addressed. Prior work has been conducted largely in developed countries and firms in these advanced economies (see e.g., the work of Senyard et al., 2009; 2011; 2014). We argue that the diminishing return to innovativeness at higher levels of bricolage, maybe because of contextual facets. For example, one specific contextual element neglected at this stage is that of the business or market environment firms emanate from and operate in. Our view is that bricolage explains what

innovative organisations do to differentiate themselves from less innovative organisations when they have significant resource constraints. This explanation becomes more relevant and manifests itself more strongly in market environments where resource constraints are a dominant characteristic, such as at the BoP.

According to Baker and Nelson (2005) bricolage encompasses two activities. Firstly, it involves acting creatively towards market opportunities. Secondly, it involves improvising combinations of available resources and directing them toward innovation processes. A firm that engages in bricolage is expected to integrate and combine required resources to produce products that are not only new, but also suitable for the market (Davidsson et al., 2017). In this sense, each possible combination of resources may add new features or attributes to existing products that meets customer various demands. Given that bricolage enables the firm to combine and reassemble different resources it has access to, it will be able to develop and commercialise products that are appealing to the market (Banerjee & Campbell, 2009). This ability enables the firm to accept and respond to different demands that customers may have.

While we argue that there are benefits from engaging in bricolage, we caution that benefits may exist or occur up to a specific level or point. Engaging in very high levels of bricolage may have a diminishing return to product innovativeness. In striving to improve product innovativeness, local BoP firms may keep on combining the resources they hold in different ways. Accordingly, a very high level of bricolage directed toward NPD may consume their limited resources without any value added novelty or improvisation (Senyard et al., 2014). After combining and integrating resources over time, new combinations may not result in new attributes or features to add to current or new products. Therefore, BoP firms may find themselves unable to provide value-laden products to their market(s). A very high level of bricolage erodes available product-related resources and adds little novelty to the resource combinations or innovativeness of the firm. Therefore,

H1: Bricolage has a curvilinear relationship with product innovativeness in BoP firms, illustrating an inverse U-shaped pattern.

2.4 Moderating effects of social ties

Social capital theory supports the view that firms who use their relationship with stakeholders will demonstrate better performance (Boso et al., 2013). Social ties, as an important form of social capital, have the capacity to improve business performance by helping firms to face resource management challenges (see Acquaah, 2007; Kebede & Butterfield, 2009). It has been argued that civil society organisations, governments, and local firms both individually and jointly play a role in overcoming challenges in BoP markets (Varman, Skålén, & Belk, 2012). Because product innovation requires superior knowledge of technological trends and local markets as a fuel for NPD processes (Linna, 2012), social ties with these actors may improve resource exploitation in innovation processes.

Ties with civil society organisations. In BoP markets, local manufacturing firms may establish ties with civil society organisations who are involved in the alleviation of poverty and sustainable development programs (Schuster & Holtbrügge, 2014a; Webb et al., 2010). In fact, civil society organisations support communities in BoP markets to tackle social and economic difficulties (Hahn & Gold, 2014). Previous studies support the value of establishing ties with civil society organisations (Hahn & Gold, 2014; Reficco & Márquez, 2012). In BoP settings, civil society organisations act as bridges between local manufacturers and communities who are consumers or potential consumers of their products. Effective interactions with the local community supported by civil society organisations provides local BoP firms with a better understanding of the market, consumption patterns, and consumers' expectations of new products (Murphy et al., 2012; Webb et al., 2010).

Civil society organisations can play an advisory role about consumers' needs, their status, and potential opportunities (Schuster & Holtbrügge, 2014a). Their experience and understanding of the local environment can help firms more thoughtfully exploit their own product-level resources to convert them into innovative product (Chesbrough, 2006; Webb et al., 2010). Moreover, through their local knowledge and long-standing relationships, civil society organisations can assist local firms to overcome institutional barriers and build legitimacy and trust within the BoP community (Webb et al., 2010).

It is our expectation that the saturation point at which the novelty of resource deployment occurs at very high levels of bricolage or lack of novelty in resource combinations can be smoothed through greater ties (Dahan et al., 2010). Through stronger ties with civil society organisations, BoP firms may identify ways to more effectively leverage their resources. By acquiring more understanding about end users' expectations and consumption patterns, BoP firms can effectively and efficiently combine their resources and target them toward greater product innovativeness. Therefore,

H2a: Ties with civil society organisations positively moderate the inverse U-shaped relationship between bricolage and product innovativeness, demonstrating a more linear-shaped pattern.

Ties with the government. In BoP markets, governments are expected to ensure that the consumers are sufficiently served from a social welfare standpoint as local firms cannot be trusted to do so by themselves (Prahalad, 2004; Schwittay, 2011). As such, governments intervene in supply and demand by putting laws and conditions and provide advisory services to manufacture in relation to local firms' NPD activities. In BoP environments, governments have significant power and control over economic activities and directly influence and intervene in market systems and regulatory policies (Acquaah, 2007).

Ties with governments may help local BoP manufacturers in configuring their resources (Schuster & Holtbrügge, 2014a). Political leaders may contribute to a firm's legitimacy and provide advice about impending business regulations that might affect NPD activities (Kotabe, Jiang, & Murray, 2011). Firms may also benefit from ties with government in the form of incentives such as lower tax rates and extended debt grace periods, free land, and business licenses, and less bureaucratic procedures (Sheng, Zhou, & Li, 2011; Webb et al., 2010) which may allow firms to access to extra resources. Moreover, ties with government can be a source of regulatory, technological, and market knowledge that enable firms to better evaluate market prospects and leverage their limited resources into market opportunities (London & Anupindi, 2012).

The role of government is significant because BoP governments often directly participate in, and attempt to control and influence markets across manufacturing sectors (Ruan, Hang, & Wang, 2014). Setting product-related standards for the manufacturing sector may improve firms' innovation activities as standards offer comprehensive and structured information about key characteristics of the product groups, quality, components and technological criteria (Ruan, Hang, & Wang, 2014). Retaining strong ties with governments can guide BoP firms NPD strategies through clearer legal, and standard procedures and therefore, firms' new product projects are guided towards enhancing BoP consumer's needs and expectations. The adverse effects of formal institutional voids can also be minimised through government support and enhanced legitimacy through government endorsement and favourable treatment (Wang & Chung, 2013). Under this condition, the inverted U-shape effect of high levels of bricolage in affecting firm's product innovativeness can be attenuated by pooling knowledge generated through ties with government in BoP markets. In other words, the declining effects of bricolage in product innovativeness can be counter balanced by ties with the government. Thus, we expect BoP firms to benefit from ties with governments which mitigate the inverted U-shape relationship between bricolage and product innovativeness. Therefore,

H2b: Ties with government positively moderates the inverse U-shaped relationship between bricolage and product innovativeness, demonstrating a more linear-shaped pattern.

2.5 Product innovativeness and customer value

While perceived value is a major theme in research, it has received scant attention in BoP markets (e.g., see Dey et al., 2016; Ernest et al., 2015), especially in B2B contexts. To many marketing practitioners and academics, value should be the major focus of firms for their profitability and sustained growth (Cho & Pucik, 2005). In BoP markets, value plays a central role in new product success (Dey et al., 2016). The best way to create value for customers is engaging in innovation and developing products that addresses customers' needs (Emden, Calantone, & Droge, 2006; West & Bogers, 2014). London et al. (2010) note that in BoP markets, local firms who pursue the creation and delivery of superior customer value will need to focus heavily on providing products that customers perceive as valuable as compared to their competitors. BoP local manufacturers can create superior customer value through their product innovations and create a positive perception of the value offering by providing less complex product with higher quality and durability that help them improve the quality of their life and wellbeing (London & Anupindi, 2012).

According to London (2009) value is likely to be captured when products are both affordable and unique in BoP markets. For example, FAFFA a manufacturer of food products in Ethiopia deals directly with retailers, produce low-cost, innovative high protein food for children who are being weaned from breast milk. They are affordable in price and innovatively help mothers improve their children wellbeing by providing them a good substitute for breastfeeding. This is an indication that offering value laden, affordable product to the BoP consumers boosts

profits and prosperity for everyone along the value chain. As such, if a BoP firm is capable to offer an innovative product with unique features to customers that help to improve the quality of their life, they will perceive a higher level of value from the products. Therefore,

H3: BoP firms' product innovativeness is positively related to BoP customers value.

2.6 Moderating role of marketing capabilities

Reaching BoP markets through conventional product development and innovation is a difficult task given the significant constraints and conditions (e.g., imperfect supply chains and media) that exist in these markets (Dey et al., 2016; Jaiswal & Gupta, 2015). There is a need to enhance marketing to effectively position innovative products and deliver value. The role of marketing among BoP firms helps to differentiate products from competitors and commercialise them (Anderson & Billou, 2007; Prahalad, 2012). Superior marketing capabilities are essential in BoP markets as the benefits of innovative products must be effectively communicated to the consumers who might be uneducated and have limited access to all medias (Seng, Sum, & Mahfar, 2015).

Product commercialisation requires making sure that the customers can quickly acquire and use the new product with uninterrupted supply (Prahalad, 2012). However, in BoP market poor infrastructures, underdeveloped distribution channels, and communication difficulties simply interrupted supply (Mason & Chakrabarti, 2017). In this environment, superior marketing capabilities facilitate communicating the benefit of new offerings to BoP customers (London et al., 2010). Further, marketing capability in BOP improve awareness and facilitate accessibility to the product (Pitta et al., 2008). Marketing capabilities allow BOP firms to minimise asymmetries in customer information about their new products and communicate how the product meets their needs (Webb et al., 2011). Therefore,

H4: Marketing capabilities positively moderate the relationship between product innovativeness and BoP customers perceived value.

2.7 Methodology

2.7.1 Study context

The study used a Sub-Saharan African country (SSA) - Ethiopia- to sample local BoP manufacturing firms (i.e., who deal with down-stream retailers) to test the hypotheses. At large, the African continent is seen as the next big opportunity for local and international businesses (McKinsery, 2010), but has rarely been used to examine product innovation and marketing issues (Gebreeyesus, 2011). In SSA, the international finance corporation (IFC) has estimated the BoP market at \$429 billion, and Ethiopia has an estimated market potential of \$84 billion (Chakrabarty, 2016). The country exhibits typical BoP characteristics such as poor infrastructure and bureaucracy, impoverished society, significant business challenges, and institutional barriers (Kebebe, Duncan, Klerkx, De Boer, & Oosting, 2015).

Ethiopia is gradually departing from the early stages of economic development, and the manufacturing sector significantly contributes to the economy and poverty reduction (Berhanu & Poulton, 2014). Ethiopia's economic growth since 2003 shows GDP growth rate of 10.9% until 2013 (Chakrabarty, 2016). The country's economic transformation through reallocation of workers from the less productive agriculture to the more productive manufacturing sector is an important step towards the creation of well-paying job opportunities (Geiger, 2015). In its effort to accelerate manufacturing growth, Ethiopia has developed industrial zones in various parts of the country (Gebreeyesus, 2013) such as Hawassa, Bole Lemi I, Dire Dawa, Adama, Mekelle, and Kombolcha Industrial Parks.

2.7.2 Sample and data collection

Adopting a multi-informant design, we collected data from top management team members including chief executive officers (CEOs), the marketing (and sales), and product managers of local manufacturing firms, as well as customers. Firms were identified from the Addis Ababa Chamber of Commerce and 2merkato business directories. To ensure adequate selection of sample, the criteria of Boso et al. (2013) was applied: I) manufacturing firms, medium-large in size; II) manufacturers of physical products; III) have a minimum of five years of business operations in the same industry. To enhance the generalizability of the findings, respondents were chosen from manufacturing firms in five different industries. Our chosen industries were selected on the basis of their economic importance and spending patterns of customers.

Initially, 945 firms that fulfilled our criteria were identified and contacted, with 218 expressing their willingness to participate. Three different surveys were distributed to three different managers in each firm, and the fourth survey was distributed to customers of each firm. The surveys were administered using the drop-and-collect technique which is common in BoP countries (see Boso et al., 2013). Drop-and-collect enhances the response rate among Sub-Saharan African (SSA) firms (Acquaah, 2007) because it minimises the number of the undelivered questionnaires and encourages respondents to complete the questionnaire (Trentelman, Petersen, Irwin, Ruiz, & Szalay, 2016). At the conclusion of data collection, we received 150 completed survey packages, encompassing a total of 450 usable surveys representing 68% response rate. When respondents in the focal firm completed the survey, we asked the marketing manager to introduce two to three of their customers and we could collect 325 usable customer surveys. Our sample includes industries such as Food (44%), shoe & plastic (20%), detergent, health and beauty (19.3%), garment and textile (16 %) and others (0.7%). The average number of full-time employees was 186, and the average number of managers in the management team was 5. On average, the firms had been in business for 13 years.

Measures. The current study drew on existing literature for measures and where necessary, we adapted them to fit the BoP context. In line with established practices to ensure reliability and integrity of responses (e.g., Morgan et al., 2012), informant evaluation was conducted, and respondents were assessed via two items in each survey evaluating their competence in answering the survey questions and knowledge about their firms' business operations, strategies, and business environment using seven-point rating scale (1= Not at all; and 7= Very much so). The average score obtained was above 5 indicating informants were competent and knowledgeable.

CEO survey. Social ties - Ties with civil society organizations were measured via six items drawn from Schuster and Holtbrugge (2014a), assessed on a seven-point scale from 1= "Very little" to Very extensive." Ties with the government were measured via five items adapted from Acquah (2007) assessed through a seven-point scale from 1= "Very little" to Very extensive."

Product Manager Survey. Bricolage - To measure bricolage, we adopted five items from Senyard et al., (2014). We used a seven-point scale from 1= "Never" to "Always."

Marketing manager survey. Product innovativeness and marketing capability - Adapting measures from Kim et al. (2015), two items were used to measure product innovativeness on a seven-point Likert scale ranging from 1 = "strongly disagree" to 7 = "strongly agree." Further, nine items were adopted from Sok et al. (2015) to measure marketing capabilities, which has been used in BoP context. Items were measured on a seven-point rating scale: 1 = "Much worse" to 7 = "Much better."

Customer survey. Customer value - Six items were adopted from O'Cass and Sok (2013), measured via a seven-point Likert scale ranging from 1 = "strongly disagree" to 7 = "strongly agree." Items were borrowed to reflect quality and affordability dimensions of the customer value in BoP. We adopted items that encompass customer's perceptions of both quality and affordability of the firms' product.

Control variable - We controlled for firm size (based on the number of employees) and firm age by calculating natural logarithm of this values. These variables are suitable control as prior studies have shown that firm size has a positive relationship with innovative activities and customer value (Uhlaner, van Stel, Duplat, & Zhou, 2013).

2.8 Preliminary analysis

To check the reliability of measures, we evaluated their Cronbach alphas. All values exceeded the 0.7 threshold (Nunnally and Bernstein, 1994) (see Table 2.1). Results of factor analysis show factor loadings for all items (range from .60 to .95) are greater than the recommended .5 (Hulland, 1999). AVE values for all constructs exceeded the recommended threshold (0.5) supporting convergent validity (Fornell & Larcker, 1981). Discriminant validity is evident as the square root of AVEs for all constructs were higher than the respective correlations (Fornell & Larcker, 1981). Results are presented in Table 2.2.

Table 2.1 Construct measures

Construct	Items	Loading
Bricolage (CR=.92)	In our business...	
	we use any existing resources (financial, equipment, staff etc) that seems useful to responding to a new problem or opportunity.	.60
	we deal with new challenges by applying a combination of our existing resources (financial, equipment, staff etc.) and other resources inexpensively available to us.	.84
	by combining our existing resources (financial, equipment, staff etc), we take on a variety of new challenges.	.95
	when we face new challenges or opportunities, we put together workable solutions from our existing resources (financial, equipment, staff etc).	.74
	we combine resources (financial, equipment, staff etc) to accomplish new challenges that the resources were not originally intended to accomplish or be used for.	.81
Product innovativeness (CR=.91)	Our firm has been focusing on...	
	developing new products that had unique features or attributes that are different from those of existing products.	.81
	developing new products that offer unique benefits for customers.	.81
Ties with civil society organization (CR=.87)	In our firm, top managers have established and used relationships with...	
	local Chiefs and/or their representatives in the area our firm is located.	.87

	leaders of religious organizations (Priests, Pastors, Imams, Traditional religious priests).	.71
	high profile citizens and/or local community leaders.	.76
	non-governmental organisations.	.81
	non- profit organizations.	.77
	community based organizations.	.83
Ties with governments (CR=.91)	In our firm, top managers have established and used relationships with...	
	executives of the city councils (e.g., mayor or council members).	.85
	executives of the district councils (e.g., kebeles and sub-city council members) and/or executives of the regional governments (e.g., regional bureau offices).	.73
	executives of the national government (e.g., ministers and parliamentarians).	.80
	officials in regulatory and supporting institutions (e.g., Ethiopian revenue and customs authority, Development Bank of Ethiopia, Ministry of Finance, and other government departments).	.90
	officials in investment and industrial institutions (e.g., Ethiopian Investment Agency, Ethiopian chamber of commerce).	.93
Marketing capabilities (CR=.91)	Our firms' marketing activities, compared with our major competitors, in terms of...	
	pricing products has been...	.80
	test marketing of new products has been...	.88
	launching new products has been87
	attracting and retaining the best distributors has been...	.63
	developing and executing advertising and promotion programs has been...	.82
	analysing market information has been...	.80
	sales management has been67
	developing creative marketing strategies has been...	.82
	translating marketing strategies into action has been75
Customer value (CR=.92)	In thinking about this firm's product(s) compared to those of similar products in the market...	
	this firm provided me with better product quality.	.77
	this firm provided me with a more reliable product.	.87
	this firm provided me with a product that meets the industry quality standard better.	.70
	the products of this firm are priced more suitable for customers.	.78
	the products of this firm are priced better compared to competing products.	.68
	the products of this firm are more affordable for customers compared to competing products.	.81

Table 2.2 Construct-level Measurement Statistics and Correlation Matrix

Variables	Mean	SD	AVE	1	2	3	4	5	6
1.Bricolage (BRI)	5.5	.85	.63	.79					
2.Ties with civil society (TCS)	4.3	1.4	.63	.05	.79				
3.Ties with government (TGO)	5.3	.97	.75	.04	.62**	.87			
4.Product innovativeness (PI)	5.5	.97	.67	.11	.09	.03	.82		
5.Marketing capability (MC)	5.1	.99	.71	.15	.06	.05	.34**	.84	
6.Customer value (CV)	5.3	.50	.61	.14	-.23**	-.06	.19*	.09	.89

$P^* < .05$, $P^{**} < .01$

Diagonal elements in bold are the square roots of the average variance extracted for constructs measured reflectively with multiple items.

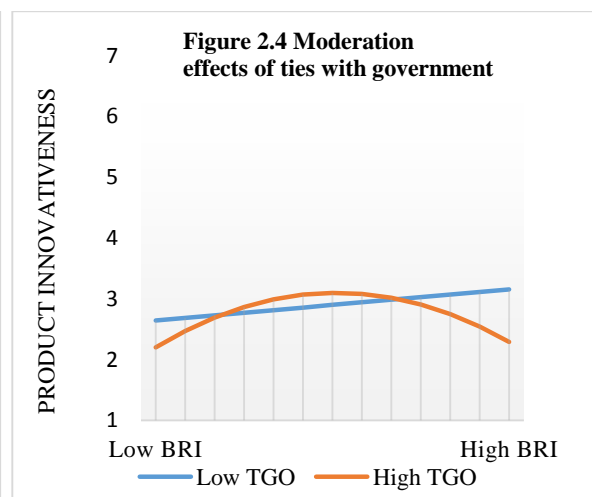
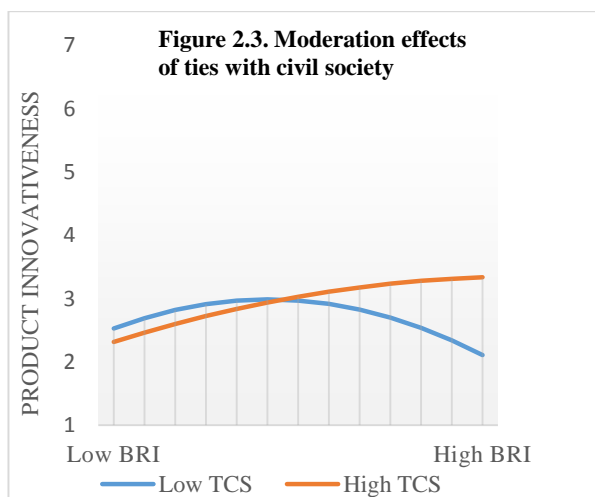
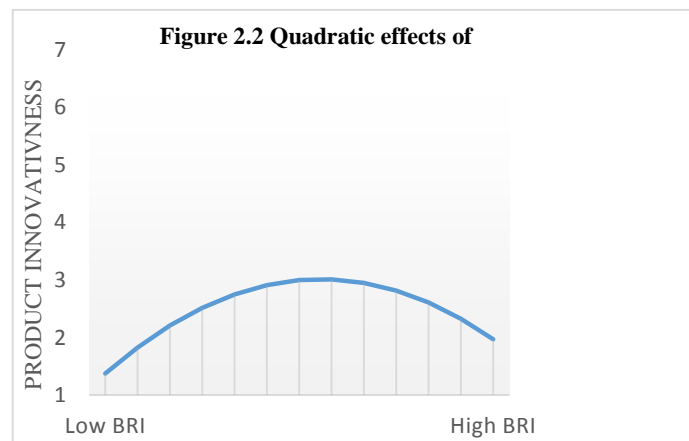
2.9 Results

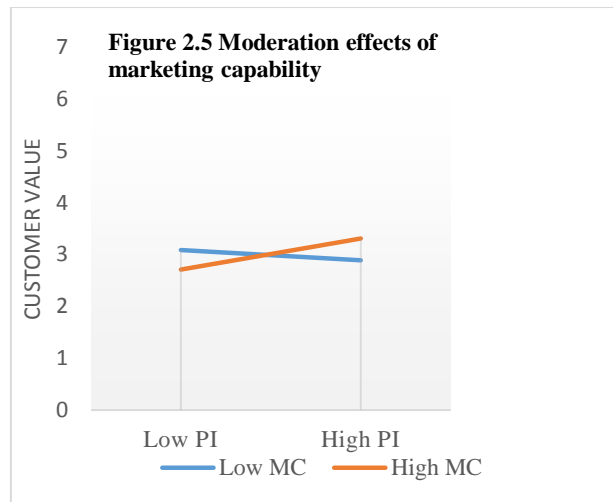
Hierarchical regression analysis was used to test the hypotheses (Table 2.3). In model 1, we tested for the effect of control variables on product innovativeness. The analysis shows, no control variables significantly affected product innovativeness. To test H1 and the curvilinear effect of bricolage on product innovativeness, two models were developed. In model 2, the linear effect of bricolage on product innovativeness was entered. The result shows that the linear effect of bricolage is positive but not significantly related to product innovativeness ($\beta = .10$; $t\text{-value} = .96$). In model 3, the quadratic effect of bricolage was added to the model. The result shows that quadratic effect of bricolage on product innovativeness is negative and significant ($\beta = -.19$; $t\text{-value} = -2.22$). The result further shows that the direction of β for linear effect is positive, while the direction for quadratic effect is negative. The results supports an inverted U-shaped relationship between bricolage and product innovativeness, supporting H1.

Table 2. 3 Hierarchical regression results

Variables	Product innovativeness						Customer value		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Age	.14 (1.4)	.13 (1.18)	.12 (1.23)	.12 (1.38)	.13 (1.26)	.14 (1.72)			
Size	-.09 (-.87)	-.09 (-.83)	-.10 (-.97)	-.11 (-1.07)	-.09 (-.89)	-.12 (-1.16)			
Curvilinear effect									
Bricolage (BRI)		.10 (.96)	2.04 (2.32)	1.8 (2.12)	.97 (.95)	-7.1 (-1.56)			
BRI ²			-.19* (2.22)	-.17* (-2.03)	-.18* (-2.08)	.62 (-1.38)			
Moderation effect on curve									
Ties with civil society (TCS)				.03 (.34)	.42 (.95)	-.23 (-.42)			
Ties with government (TGO)				.10 (.88)	-1.2 (-1.84)	.06 (.78)			
BRI × TCS					.07 (.26)	.02 (.26)			
BRI × TGO					.24* (2.02)	.05 (.35)			
BRI ² × TCS						.10* (2.03)			
BRI ² × TGO						-.19* (-2.67)			
Direct effect									
Product innovativeness (PI)							.18* (2.17)	.09 (.36)	.10 (.47)
Moderation on direct effect									
Marketing capability (MC)								.01 (.17)	-.10 (1.14)
MC × PI									.20* (2.01)
Overall R ²	.014	.021	.059	.074	.104	.160	.035	.036	.036
Adjusted R ²	.000	.001	.028	.028	.045	.090	.028	.020	.013
P* < .05									

H2a posits that ties with civil society organisations in BoP markets attenuate the curvilinear relationship between bricolage and product innovativeness. The results show the moderating effect of ties with civil society organisations on bricolage (squared) and innovativeness is positive ($\beta = .10$; $t\text{-value} = 2.03$) supporting H2a. In Figure 2.3, the negative quadratic relationship between bricolage and product innovativeness becomes flat and more linear as ties with civil society organisations increase. Unlike our predictions in H2b, the moderating effect of ties with government is not supported. Results for H2b show a significant negative effect ($\beta = -.19$, $t\text{-value} = -2.67$). As can be seen in Figure 2.4, in the presence of higher levels of ties with government the inverted-U shape relationship between bricolage and product innovativeness becomes more negative.





The result for hypothesis 3 shows a positive relationship between product innovativeness and customer value in BoP markets ($\beta = .18$, $t\text{-value} = 2.17$). The results presented in Table 2.3 confirm that marketing capability positively moderate the relationship between product innovativeness and customer value ($\beta = .20$; $t\text{-value} = 2.01$). Furthermore, following Aiken, West, and Reno's (1991) guidelines we graphically show the moderating effect of marketing capabilities on product innovativeness and customer value in Figure 2.5 which demonstrates that at higher levels of marketing capability, the effect of product innovativeness on customer value is stronger.

2.10 Discussion

BoP markets offer tremendous opportunities, where firms can realise profit while simultaneously contributing to better living conditions of the poor. However, to achieve these outcomes BoP firms face significant challenges such as poor infrastructure, informal distribution channels, and lack of transparent legal system when operating in the market. In order to tap opportunities successfully, firms need to creatively combine their existing resources to innovate new products that offer value and meet price expectations of their customers who also face significant challenges of low income and low spending power.

The main objective of this study was to investigate the benefits and drawbacks for local BoP manufacturers' product innovativeness and value creation from their engaging in bricolage. This objective was couched within our three research questions. We investigated whether the relationship between bricolage and product innovativeness has an inverted U-shape and whether ties with civil society organisations and government may attenuate the relationship. Our findings indicate that the relationship between bricolage and product innovativeness is non-monotonic and that an inflection point indeed exists in when local BoP firms engage in bricolage. We show that ties with civil society organisations mitigate the bricolage - product innovativeness non-linear relationship in BoP markets. Moreover, our findings indicate that managing an optimal level of bricolage results in stronger product innovativeness among BoP firms, especially those with higher levels of established ties with civil society organisations. For BoP firms with a low level of established ties with civil society organisations, the slope of the curve changes, showing the loss of inverted-U shape effects in the relationship. While ties with government would be negative due to excessive intervention and could not help to mitigate the inverted-U shape effects of bricolage on product innovativeness. Firms emphasising in their marketing capabilities can get familiarity with the market and understand the activities of key competitors, are likely to deliver value (i.e., affordable and quality new product) to customer in their NPD activity more than those that do not emphasise on these activities. The findings offer several managerial and theoretical implications.

2.10.1 Theoretical contributions

The study adopted a rigorous research method using three respondents in each manufacturer in good positions to provide the best answers to questionnaire. To provide more robust results, this study also surveyed customers of each firm to achieve a better understanding of value the

manufacturers offer to their customers. This approach increases the reliability of findings, adopting a design rarely implemented in the literature. Through our design and findings this study provides important theoretical contributions to industrial marketing and product innovation literature, in particular, research focusing on marketing and NPD in resource-constrained BoP environments focusing on BoP manufacturing firms. Product innovation research focusing on the BoP calls for investigation of how to overcome resource constraints to foster firm success (Cunha et al., 2014) and customer value creation (Dey et al., 2016). We respond to this call and take a new theoretical position in contrast to previous literature on bricolage addressing the marginal benefits of bricolage on product innovativeness. Most prior research investigating the impact of bricolage on product innovativeness has paid attention to ventures in highly developed markets (Senyard et al., 2014), while little is known about how bricolage contributes to product innovativeness and customer value creation in resource-constrained BoP markets.

Moreover, much of the previous research on bricolage - innovativeness relationship has been inconclusive, and recent research has not been successful in supporting the existence of an inverted-U-shape relationship between the two constructs (e.g., Senyard et al., 2014). Our study contributes to the capability-based view of the firm by conceptualising and measuring bricolage as a distinctive capability having the potential to contribute to the product innovativeness activity of BoP firms to develop value for their customers in terms of affordability and quality. Our findings support our theory and show that the BoP context is a key determining factor in explaining our focal relationships. Our findings confirm in BoP markets deploying bricolage may not be a successful prescription forever. When theorising bricolage for firms originating in BoP market, the unique characteristics of BoP market environments and challenges encountered by these firms should be considered in the long term.

Leveraging and creatively rebundling resources may offer benefits in supporting product innovativeness to a certain point and after that point the benefit of bricolage starts diminishing.

We further contribute to the current literature by addressing the call for identifying boundary conditions surrounded bricolage (Senyard et al., 2014). Focusing on the boundary condition of bricolage, we extend the literature on social capital, by showing that not all ties are equally beneficial and ties with civil society organisations and government play differing role when it comes to the relationship between bricolage and firm innovation activities. Our findings shed light on the nature and the role these actors' play in innovation processes and resource configuration of BoP local firms. Interestingly, our findings regarding the contribution of these ties are in contrast to a large body of literature that underscores the positive impact of government in business processes of BoP local firms (Boso et al., 2013). Our results indicate that BoP firms' deployment of bricolage is less beneficial under conditions of strong ties with the government rather than civil society.

A plausible explanation for this is that when managers fulfil political mandates, government may intervene in innovation activities of the BoP firms. When governments' intervene in firm activities, the firm may be distracted from day to day business operations, product innovation, and long-run strategy implementation. In alignment with the research reporting the supportive role of civil society organisations in business processes, our findings help to unpack how these entities bridge the gap between BoP communities and local BoP manufacturers' innovation activities. In fact, our findings introduce ties with civil society organisations as a key condition through which bricolage can be effectively managed in NPD projects. When civil society organisations share their valuable market knowledge and other resources, the firm combines and reconfigures their available resources to develop innovative products that address customers' needs.

While these organisations can be a source of reliable market knowledge, the findings indicate that BoP local manufacturers also require effective marketing capabilities at the time of launching new products. While marketing of new products can be challenging in BoP markets due to lack of effective sales, communication and distribution infrastructure, superiority in marketing skills becomes a vital aspect of commercialisation of the new product for BoP manufacturers. Therefore, product innovativeness can fully be beneficial for customer value creation only if BoP local manufacturers effectively deploy marketing capabilities that fit the needs and infrastructure of BoP markets. Our findings contribute to the literature in BoP by posing while product innovativeness performs a critical role in value creation, marketing as a complementary skill is needed to engage deeply with BoP customers.

2.10.2 Policy implications

Delivering value at the BoP requires utilising existing resources and long-term commitments to engage in social ties for innovation. Innovation policy in BoP countries may only be successful if they consider the needs of the poor and foster ties with local community groups, and NGOs (see also Schuster & Holtbrügge, 2014a). Their support and developing initiatives are key to improve the living conditions at the BoP. Without these ties, local firms will struggle to access and utilise resources to deliver value laden products to their markets. However, government and government bodies have to be careful on the impact they may have on these firms and their activities in improving people living standard. Thus, policymakers should focus on creating conducive environments that facilitate the creation of cooperation between social actors and local BoP firms without too much interference in their routines and processes.

2.10.3 Managerial implications

To serve their customers, managers in BoP firms are suggested to deliver value to their customers by producing affordable and quality products. Our findings suggest managers enriching their resource bases with too much recombination and reconfiguration of resources need to be aware of the detrimental effects on product innovativeness. One of the approaches that managers can enrich their resource bases is managing social networking capabilities and developing close relationship with civil society organisations. Ties with civil society provides managers updated market knowledge and helps identify opportunities in the market to develop innovative products that not only deliver value to customers, but also guarantee their sustained growth. Managers are advised to involve experienced people in the management team who are familiar with the BoP context and have done business across several industries. Experienced people might have accumulated ties with civil society organisations and help generate deeper market intelligence. However, we warn managers that depending too heavily on ties with government offices entails risks. This is critical because in many BoP markets relations with government underpin much business. Managers are advised ties with government might be beneficial, however; they should have full control over the relationship and stop any relationship that may interfere in the operational process inside the firm.

Furthermore, the results highlight the need for developing marketing capabilities in BoP local firms. In fact, BoP managers might need to adopt a more balanced approach to equally support product development and marketing activities within their firms. Therefore, the recruitment system of BoP local firms should be designed in ways that pay more attention to employees' marketing background in the targeted market. Hence, from inception, local BoP firms may need to invest in developing marketing processes within their firms along with their efforts to support R&D.

2.10.4 Limitations and directions for future research

The results of our study contribute to the current literature focusing on the BoP, especially its resource constrained context. However; there are some limitations to the study that open up new avenue for future research to advance our understanding on bricolage capability and product innovativeness and related issues in other BoP markets. First, the literature emphasises the need for firms to leverage the existing capabilities (Boso et al., 2013; Ngo and O'Cass 2009). Beyond bricolage capability examined in this study, we suggest that future research should explore how other firm capabilities enhance product innovativeness to en route customer value at BoP. This may also extend to deeper analysis of industry and product category characteristics where bricolage may or may not prove beneficial in pursuit of innovation.

Second, the study addresses exclusively customer value as a single outcome variable and social ties and marketing capability as moderating variables. Future research could investigate other components of firm and product related performances such as new product performance and overall firm financial performance. Research might draw insight on conditions of product innovativeness by identifying internal and external organisational factors that enhance or hinder product innovativeness. Literature advocates that the input of certain BoP market business customers and suppliers can be critical as these customers and suppliers provide tacit local knowledge that is crucial to the development of problem solving products (Gold et al., 2013; Praceus, 2014). A fertile avenue for further research could be whether the relationship between bricolage-product innovativeness are robust under other cooperation arrangements such as BoP business customers and supplier collaboration.

Third, this research focused on local BoP manufacturing firms in Ethiopia. Ethiopia shares similar characteristics to other BoP countries such as bureaucracy, institutional barriers, high rates of unemployment, and improvised society. Non-BoP developing markets located in

other countries and locations may present different patterns of behaviours related to bricolage and innovativeness. Therefore, future research may focus on multi-country design that test differences across different BoP and non-BoP markets. Finally, this study did not include micro and small manufacturing firms. Given the high growth rate of these types of firms in BoP markets and their contribution to the economy (Gebreeyesus & Mohnen, 2013), future research may focus on customer value creation through bricolage and innovation in these types of firms, especially industrial and B2B services as well as manufacturing.

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Chapter 3

**When does new product development team problem solving
creativity in bottom of the pyramid firms' pay off?**

Under review at the Journal of Business Research

Abstract

Team's problem-solving creativity is identified as a vital capability for enhancing new product success. New product development (NPD) teams' creativity may be particularly relevant to firms operating in Bottom of the pyramid markets (BoP) where resource scarcity constrains firms' ability to develop new products that suit these markets and the conditions that govern them. We posit problem-solving creativity is a team endeavour that is driven by interdependent team members' exchange of creative ideas and fresh thinking in a reciprocal relationship. Using social exchange theory, we argue that the success of creative and fresh idea exchanges depends heavily on creation of a supportive environment for NPD team members and minimising the NPD manager's role ambiguity. We collected data from 274 middle-level managers' of 137 local BoP manufacturing firms operating in a sub-Saharan African country. The findings indicate that an NPD team's ability to creatively solve problems is a key to developing a new product that pays off financially in BoP markets. The findings also show that NPD manager's role ambiguity has a negative effect on problem-solving creativity. However, CEO's ambidextrous leadership moderates and neutralise the negative effect of role ambiguity on problem-solving creativity.

Keywords: *Bottom of the pyramid, NPD team, problem-solving creativity, ambidextrous leadership, NPD manager, role ambiguity.*

3.1 Introduction

Increasingly, local BoP firms are trying to compete against their western counterparts at the base of pyramid (Angeli & Jaiswal, 2015; Ernst, Kahle, Dubiel, Prabhu, & Subramaniam, 2015; Story, Boso, & Cadogan, 2015)³. The possession of high levels of market knowledge and awareness of local needs gives local firms a competitive edge in creatively tailoring and customising new products to address BoP markets' needs (Ernst et al., 2015). However, the success of creative solutions to product-related problems in local BoP firms maybe contingent upon firms' leadership, and the guidance, support, and motivation received from managers' that elucidate roles, and responsibility in NPD teams (Parboteeah, Hoegl, & Muethel, 2015). NPD teams receiving clear guidance and support can foster their ability to solve consumer problems creatively and in the long term improve their firm's new product performance (Atuahene-Gima & Wei, 2011; Nakata & Im, 2010). We define problem solving creativity as the ability of the NPD team members to discover and implement novel and cost-effective solutions (Atuahene-Gima & Wei, 2011).

The literature on antecedents and outcomes of team creativity has advanced in the past decade (e.g., Atuahene-Gima, 2003; Atuahene-Gima & Wei, 2011; Chang, Hung, & Lin, 2014; Carmeli, Gelbard, & Reiter-Palmon, 2013). However, this literature has generally focused on creativity and its impact on new product performance at the individual levels such as employee performance and organisational citizenship behaviour (Raja & Johns, 2010; Im & Workman, 2004; Wang, Fang, Qureshi, & Janssen, 2015). To others, understanding the enablers and impediments of problem-solving creativity in teams in NPD has been a high priority across different contexts (Anderson, Potočník, & Zhou, 2014).

³ In-text citations and reference lists are presented based on the guidelines of Journal of Business Research.

Team problem-solving creativity relies on members' social interactions, and thus it is seen as a context and environment specific issue (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Reiter-Palmon & Illies, 2004). NPD teams operating in BoP firms function within market environments bounded by unique social structures, government systems, institutions and market mechanisms (Halme, Lindeman, & Linna, 2012; Viswanathan & Sridharan, 2012). These markets are characterised by high levels of economic and political uncertainty, complexity, and lack of well-functioning institutions (Mair, Martí, & Ventresca, 2012; Ernst et al., 2015). The flux in institutional, market, and organisational environments blur the clarity of NPD goals in firms.

This lack of clarity can be instigated by unclear role definition and goals that are set by management which can increase NPD managers' role ambiguity. When managers are not clear about expectations and responsibilities, they may fail to guide and direct their teams' problem-solving creativity (Tang and Chang, 2010). However, given the need to manage the effects of environmental and contextual factors for providing problem solving products, to date very few studies have examined the effect of role ambiguity on behavioural outcomes other than general job performance, especially at the BoP (Tang and Chang, 2010; Qu, Janssen, and Shi, 2015; Wang, Zhang, & Martocchio, 2011).

Problem-solving creativity which involves the generation of novel ideas and cost-effective solutions is a vital determinant of NPD success (Atuahene-Gima & Wei, 2011; Carmeli et al., 2013; Im & Workman, 2004). NPD Success can be determined by managers' and team members' roles and responsibilities. Role ambiguity seems to be an inherent feature for jobs (i.e., team problem solving) that require creativity, and this is especially evident for organisations that face uncertain environments and tend to have organisational structures that are less formal (Wang et al., 2011). As a result, role ambiguity is omnipresent in some organisations (Fineman & Payne, 1981) and a key constrain of problem-solving creativity as it

reduces the effectiveness with which NPD managers use their expertise and creative skills, justifying the need for more research and understanding on the role ambiguity - problem-solving creativity linkage.

Clarifying roles and responsibilities in creativity practices is contingent on the leaders' ability and their passion and empathy towards employees (Beaty, 2016). Leaders may excel in creating clarity about what is expected of their subordinates (MacKenzie, Podsakoff, & Rich, 2001). Thus, the deployment of specific leadership styles may be either beneficial or detrimental to fostering creativity in teams. Because of the challenging environment that BoP local firms operate within, deploying simultaneously both transactional and transformational leadership (hereafter ambidextrous leadership) may moderate and reduce the possibility of role ambiguity impairing NPD team creativity. Ambidexterity was first introduced by Rosing, Frese, and Bausch (2011) and has received growing attention by other scholars (cf., Chebbi, Yahiaoui, Vrontis, & Thrassou, 2016; Cunha, Fortes, Gomes, Rego, & Rodrigues, 2016). Ambidextrous leadership refers here to the integration of transformational and transactional leadership styles to complement each other (Luo, Zheng, Ji, & Liang, 2016).

The virtues of either leadership or problem-solving creativity have been demonstrated in studies focusing on firms operating in developed markets (e.g., Reiter-Palmon & Illies, 2004; McDonough, & Barczak, 1992; Mumford, Hunter, Eubanks, Bedell, & Murphy, 2007), and more recently in emerging markets (e.g., Atuahene-Gima & Wei, 2011; Qu, Janssen, & Shi, 2015). Despite the presumed importance of leadership in creativity and workplace behaviours in different market contexts, its benefit to new product performance through team problem-solving creativity remains unclear, especially in firms operating at the BoP.

At present we lack a comprehensive understanding of the form of leadership that best helps to clarify roles, motivates and organises NPD managers to foster their team's ability to develop new products for BoP customer. Research on creativity has mainly revolved around

studying market knowledge competence in terms of customer and competitor knowledge, and marketing-R&D interface (Atuahene-Gima & Wei, 2011) and follower relational identification (Qu et al., 2015) as the drivers of teams' problem-solving creativity. However, boundary conditions affecting the relationship between role ambiguity and team's creativity have seldom been examined.

With our focus on role ambiguity, leadership, team problem-solving creativity and its outcome, this study contributes to theory and practice in two ways. First, relying on the social exchange theory (SET) that describes work-related attitudes and team workplace behaviours we clarify to what extent role ambiguity impairs team's problem-solving creativity. We further demonstrate the effects of ambidextrous leadership in minimising role ambiguity on team creativity and performance outcomes. The study provides a richer understanding of new product performance outcomes of NPD team problem-solving creativity in BoP markets. New product performance is a key measure as it augments the view that NPD team problem-solving creativity transforms organisational inputs (i.e., knowledge, abilities and task demands) into valuable outputs (Atuahene-Gima & Wei, 2011; Im & Workman, 2004). Second, we contribute to practice and show how ambidextrous leaders in Ethiopian BoP manufacturing firms provide an environment that supports NPD teams to develop solutions to consumer problems through new products. The role of leaders in these firms is important because they are more powerful and less democratic than leaders in firms based in developed countries (Casimir & Waldman, 2007; Muchiri, 2011). The need for context specific NPD guidance is vital to further build the competitiveness of BoP manufacturers.

3.2 Theory and hypothesis development

3.2.1 Social exchange theory

In organisational settings, problem-solving creativity is more than individual talents or intrinsic motivations (Tu, 2009). The level of problem-solving creativity may be associated with the way NPD team members interact with each other in a social setting to maintain social relationships. The importance of social transactions to generate beneficial relationships has been documented by Cropanzano and Mitchell (2005). SET emphasises interdependent and contingent exchanges by individuals as a benchmark for all social transactions and relationships (Bammens, 2016; Cropanzano & Mitchell, 2005).

According to Colquitt et al. (2013) and Oparaocha (2016) the underlining assumption of SET is that different forms of interactions between team leaders and members are anchored in reciprocal exchanges, which also facilitate mutual obligations. In BoP firms, managers are embedded in a traditional social system which cultural values and norms endorse the community's support and commitment to reciprocity (Acquaah, 2010). As such, managers create an environment that supports, encourages, and rewards employees to engage in creative behaviours that influence work-related outcomes (Carmeli et al., 2013).

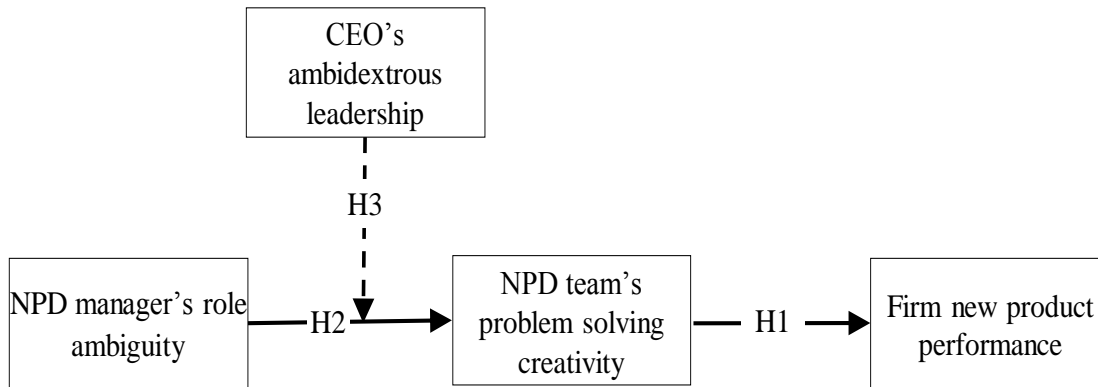
The ability to provide solution to consumer problems is critical for business success and long-term survival of organisations (Atuahene-Gima & Wei, 2011). As such, firms are always keen to understand how to encourage problem-solving creativity and ensure their processes and management do not impede it (Tse, To, & Chiu, 2017). For example, job complexity, role clarity, relations with supervisors and co-workers, and leadership are noted as significant factors in fostering creativity (Anderson et al., 2014; MacKenzie et al., 2001). This indicates that team members' social exchanges with leaders and each other, is likely to promote or impinge team member's problem-solving creativity (Liao, Liu, & Loi, 2010). In this regard, SET further suggests that leaders communicate role expectations to their subordinates by

providing tangible and intangible rewards to those who meet their expectations (Mesu, 2013). Similarly, subordinates have expectations of their leaders at a greater level, and this exchange process creates a mutual relationship between the leader and subordinate (Wang, Law, Hackett, Wang, & Chen, 2005).

Moreover, SET also helps to explain a variety of favourable attitudinal and behavioural employee outcomes (Herman, Huang, & Lam, 2013). From SET perspectives, high levels of social exchange create feelings of obligation, whereby managers not only feel that they ought to be committed to their employers, but also feel an obligation to return the organisation's favour by engaging in pro-organisational activities (Bammens, 2016; Eder & Eisenberger, 2008). However, a felt obligation to reciprocate may not fully account for the association between creativity and NPD outcomes. Indeed, NPD manager's role in providing creative solution might be linked to other types of intra-organizational factors, such as role ambiguity and leadership styles. Notably, SET provides a perspective to look at how an individual develops and maintains relationships with leaders and peers (Cropanzano & Mitchell, 2005). This suggests that social exchange gives the opportunity to examine how the two (leaders and peers) within-group relations interact to influence team and employees outcomes (Wang et al., 2015).

As indicated in Figure 1 we develop a framework that consists of and connects problem-solving creativity, new product performance, ambidextrous leadership, and role ambiguity. In the following sections, we discuss how problem-solving creativity is related to new product performance, and how role ambiguity impairs problem-solving creativity and how ambidextrous leadership positively moderates the relationship between role ambiguity and problem-solving creativity.

Figure 3.1 Theoretical model



3.2.2 Problem-solving creativity and new product performance

Successfully tapping the benefit from new products in BoP market is not simply selling cheap and low-quality versions of the products (Nakata & Weidner, 2012). Instead, new products as a solution to BoP customer's problems should consider conditions surrounding the BoP market. Products offered to this market must be developed less costly and tailored creatively to meet its unique conditions (i.e., consumers with limited income and less literacy). That is to say, tailoring local solutions and designing products that are acceptable to BoP consumers are the key to new product performance (Bhatnagar & Grover, 2014). We define new product performance as the degree to which the firm achieves its goals for revenue, sales volume, market share, sales growth, and profitability for its new product(s) (Story et al., 2015).

New product performance can be achieved through creative NPD teams (Ciarapica, Bevilacqua, & Mazzuto, 2016; Tu, 2009). NPD teams with creative initiatives can provide divergent views and ideas in a unique and meaningful way. These teams may learn from their past weakness and generate highly superior products as a critical trail in solving problems which ensure the success of new product (Kim, Im, & Slater, 2013). Further, these team initiated creative ideas can be re-used and implemented in prospective NPD project execution to trigger long-term new product success (Ciarapica et al., 2016; Im & Workman, 2004).

Managers play a pivotal role in determining the success or failure of new products. For example, firm managers in BoP focus on meeting organisational objectives through better quality products, reduced cost, and increased production outcomes (McCleskey, 2014). Firms' managers can meet their organisational objectives through their NPD team's problem-solving creativity by recognising advanced new technological and market-related ideas that assist firms in addressing and satisfying consumers' needs (Atuahene-Gima & Wei, 2011). When consumers find that the firm is creatively providing products which meet their needs, they respond positively with purchase. Correspondingly they also consider such firm's product a superior value compared to competing products in the market, which ultimately improves new product performance of the firm. New products offered to the market and developed by the NPD teams on the basis of creatively providing solution can reduce the cost of production and increase the profitability of newly developed products (Im & Workman, 2004). Further, NPD teams with the higher levels of creatively implementing and creating new ideas are likely to develop quality and less costly solutions (Leenders, Van Engelen, & Kratzer, 2003), which results in increasing adoption of the product in the market. Achieving higher levels of product adoption in the market increases sales volume, sales monetary value, and market share of the new product. Therefore,

H1. BoP firms NPD team's problem-solving creativity is positively related to new product performance.

3.2.3 Role ambiguity on problem-solving creativity

BoP firms are often involved in continuous inter-organisational changes including structural transformations, introduction of new forms performing tasks, and mergers and acquisitions (Stifel, Minten, & Tamiru, 2012). We posit that these continuous organisational changes, in response to the challenging environment they operate in, increases role ambiguity through

blurring expectations and responsibilities among people and changing work environment to an unfavourable complex one with improper tasks definition (Baillien & De Witte, 2009). We define role ambiguity as the perceived lack of information about what is expected from a subordinate (e.g., manager, employee) to perform his or her role accurately (Schmitz & Ganesan, 2014).

Because of changes and uncertainties in BoP firms, NPD managers can face greater levels of uncertainty in their jobs which results in lack of clarity in their roles. In such environment, detrimental effects coming from role ambiguity on creative behaviours is likely to be a common issue among BoP manufacturing firms (Beyene, Shi, & Wu, 2016). This could mainly be due to culture, and the way firm managers manage their employees (Peterson et al., 1995). For example in BoP cultures (countries), there is high power distance - that gives managers significant power and control over subordinates. The countries are also high in collectivism- indicating a value system that prioritises the needs of the group over the individual (Peterson et al., 1995). These cultural issues aggravate ambiguity in roles (Kirkman, Lowe, & Gibson, 2006). When role ambiguity is dominant, team managers' encounter difficulties in performing tasks and it is likely that both individual and team efforts towards providing solutions will suffer (Peterson et al., 1995; Beauchamp, Bray, Eys, & Carron, 2005; Probst & Lawler, 2006).

Role ambiguity has been related to employees' low levels of quality of work life, individual and group productivity (Schmitz & Ganesan, 2014). We argue that if NPD managers experience role ambiguity, it is likely that both individual and collective functioning of the team members will suffer from a lack of clarity and timely job-related information (see Sok & O'Cass, 2015 for similar arguments). Clarity in roles is an important factor for team creativity because when roles are vague, managers are not certain of the activities they need to perform (Coelho, Augusto, & Lages, 2011). This makes creative initiatives difficult for NPD managers

to relate their competencies to their jobs and to encourage teams to concentrate on lower cost solutions (Tu, 2009). Vague roles may also induce stress, and NPD managers who are stressed by their roles may abandon creative initiatives (Tang & Chang, 2010). Thus, NPD managers who lack a clear vision of expectations cannot bring the team together, and team creativity will be diminished. Therefore,

H2: BoP firms NPD manager's role ambiguity is negatively related to NPD team problem-solving creativity.

3.2.4 Moderating role of ambidextrous leadership

In today's competitive and changing BoP business environments, the effectiveness of leadership is one of the most critical requirements for attaining and sustaining team creativity in NPD (Gumusluoglu & Ilsev, 2009). Yet, the literature notes that leadership styles in BoP are autocratic, dictatorial and incompetent in both public and private organisations (Galperin & Alamuri, 2017; Wanasika, Howell, Littrell, & Dorfman, 2011). In particular, employees in African BoP firms tend to be closely supervised and monitored rather than being recognised for their creative actions (Kuada, 2010). In contrast, in developed countries, leaders often advocate employee empowerment and encourage autonomous thinking and creativity (Kuada, 2010). This indicates that organisational leaders in African – BoP firms tend to emphasise and practice transactional leadership and leaders rarely demonstrate attributes of transformational approaches. Transactional leadership is defined as a cost-benefit pursuance due to the leader-follower relationship is being based on contingent rewards (Ismail, Mohamad, Mohamed, Rafiuddin, & Zhen, 2010; Farrow, Valenzi, & Bass, 1980). Transformational leadership, on the other hand, is seen as moving the follower beyond immediate self-interests through “idealised influence (charisma), inspiration, intellectual stimulation, or individualised consideration” (Bass, 1999, p. 11).

In uncertain BoP markets, transactional leadership may not be sufficient to provide full range of leadership necessary to be effective in the workplace. Leaders need to create a competitive edge for their organisation through additional leadership skills. The most recent stories have attributed success to the pursuit of both transactional and transformational leadership (i.e., ambidextrous leadership) to improve organisational performance in BoP context (Chebbi et al., 2016; Cunha, Fortes, Gomes, Rego, & Rodrigues, 2016). The underlying assumption in these studies relies on the idea that a firm leader can exhibit both transformational and transactional behaviours with varying levels of intensity when a situation requires managerial actions (Birasnav, 2014) to create role clarity and enhance creativity. In this respect, ambidextrous leadership, an integration of transformational and transactional leadership styles, should be relevant to actively encourage, clarify and energise NPD managers to persevere and perform beyond expectations. Because ambidextrous leaders can stimulate and inspire subordinates (managers) to get keen interest to make a contribution and show effective team commitment to creatively provide solutions to new product commercialisation challenges in BoP. In contrast, inconsistent role assignments may confuse employees, create role ambiguity, and foster various forms of conflict, thereby resulting in decreased employees' performance (Hartnell, Kinicki, Lambert, Fugate, & Doyle Corner, 2016).

Lack of skills and poor leadership practice cannot help to mitigate effects of role ambiguity; rather it can be a cause of role ambiguity in workplaces (Kelloway & Barling, 2010). However, leaders engaging in both transactional and transformational leadership, referred to as ambidextrous leaders, can create role clarity (MacKenzie et al., 2001). Such leaders help subordinates (managers) clarify their duties and responsibilities (through for example, individualised consideration, and charismas well as contingent reward and management exceptions) and then create situations in which those responsibilities can be

effectively executed (MacKenzie et al., 2001). By this, ambidextrous leaders create work situations for their subordinates that are free of role ambiguity.

When managers' and team members' role ambiguity alleviate, social exchange relationships among the team members will be facilitated toward organisational commitment to creativity (Bettencourt, Brown, & MacKenzie, 2005). We believe that when a CEO exhibits ambidextrous leadership behaviours, such as communicating clear goals and objectives, collective vision and engagement in developmental behaviours, NPD managers are less likely to perceive role ambiguity (Epitropaki & Martin, 2013). Hence, ambidextrous leaders who repeatedly reward subordinates (managers) for compliance to set objectives and focus on close supervision, and concurrently inspire, urge and exhort subordinates (managers) to look for new and better methods of performing NPD activities will avoid ambiguity in the minds of the NPD manager. Ambidextrous leadership can neutralise the negative effects of role ambiguity on problem-solving creativity. Therefore,

H3. In BoP firms, ambidextrous leadership attenuates the negative effect of NPD manager's role ambiguity on NPD team problem-solving creativity.

3.3 Method

3.3.1 Research context

Data were collected through a survey of local manufacturing firms operating in Ethiopia. Ethiopia is an ideal BoP context because the country has low-grade infrastructure (electricity and transport networks, telecommunications, water provision, etc.) large parts of the population live in poverty, and there are high levels of bureaucracy and illiteracy (Shiferaw-Mitiku, Shemelis-zewdie, & Ushadevi, 2014). Nevertheless, the country has also shown a significant economic growth rate of 10.9 % over the last two decades (Chakrabarty, 2016). Moreover, Ethiopia offers a significant market potential of approximately \$84 billion representing a good

opportunity for local businesses to function in the country (Gekonge, 2013). The market potential of BoP draw local manufacturers' attention for more engagement in the sector and to contribute to sustainable growth of the country.

The country's innovation policy is seen as an engine for productivity and growth in most BoP countries (Gebreeyesus, 2013). According to the World Bank recent release on the "*Role of innovation in Ethiopia, 2015*" the government of Ethiopia initiated an enabling environment for innovation through a policy document after the fall of the Derg regime and establishment of the transitional government in 1993. The policy document outlined the important role and the urgent need for innovation to increase the country's sustainable development. The country revised its prior policy and adopted a new Science, Technology, and Innovation (STI) policy in 2012. In addition, the government advocated STI implementation to bolster the linkage between different actors and institutions involved in the innovation ecosystem.

The government also implemented a policy focusing on the development of the manufacturing sector through the use of industrial parks to support local manufacturers in identifying partners by matching suppliers' capabilities and buyers' needs (World Bank, 2015). Moreover, the Ethiopian government has a clear development agenda and increasingly recognises the need to combine a market-friendly policy environment in innovation (Gebreeyesus, 2013). Hence, alongside tailoring products creatively, to sustain in the market, manufacturers in Ethiopia have to fulfil the innovation policy pushes and obligations from the government besides the competition from local and overseas firms and excessive product demand from the consumers.

3.3.2 Data collection, and sample structure

We tested our hypotheses with data collected from middle-level managers of local manufacturing firms operating in Ethiopia. Initially, a list of local manufacturing firms was obtained from the chamber of commerce business directory. Initially, 500 firms meeting the study criteria, including firms who have introduced and commercialised new product(s) in the last three years were identified, and 218 accepted to participate in the study. The survey was administered via self-completed, paper and pencil instruments, using the drop-and-collect technique which is a popular technique in developing countries (Acquaah, 2007; Acquaah & Eshun, 2010; Sok, O'Cass, & Miles, 2015). One of the researchers personally visited the firms and dropped the surveys to product and marketing managers who were knowledgeable about survey questions. After several phone call reminders, 137 firms completed the surveys, resulting in 274 usable responses with a response rate of 62.8 %. The firms in the sample represented various industries in the manufacturing sector including food and beverage (57 firms), health, beauty and detergent (28), footwear (7), plastic (19), garment and textile (24), and other (2).

3.3.3 Measures

We developed two self-administered surveys, one for NPD managers and one for marketing managers. Multiple informant design seemed most appropriate to test our hypotheses as it reduces the sample bias problem faced in surveying a single informant (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We measured role ambiguity using three items from Schmitz and Ganesan (2014). Problem-solving creativity was measured via four items that were adopted from Atuahene-Gima and Wei (2011) to capture the novelty and cost-effectiveness of the solutions. Four items measuring new product performance were obtained from Story et al. (2015) capturing performance in the first 12 months after the launch of a new product relative

to the firm's stated objectives. To measure CEO's transformational and transactional leadership both marketing and NPD managers were targeted. In line with past research on leadership, transformational leadership (TFL) was measured using seven items from Carless, Wearing, and Mann, (2000) and transactional leadership (TSL) was measured using four items from Chang, Bai, and Li (2015).

3.3.4 Control variables

The study controlled for the factors that might influence firm's new product performance. Firm size was measured as the logarithm of the number of employees (De Clercq, Dimov, & Thongpapanl, 2013). Since the length of operation can influence performance, firm age was defined and measured as the number of years since the formation or incorporation of the firm (Sok & O'Cass, 2015).

3.3.5 Data aggregation

Given that we gathered the data on ambidextrous leadership qualities of the CEO from middle-level managers across marketing and NPD departments, thus following James et al. (1984) and Castro (2002) technique we checked whether it was appropriate to aggregate the data. We calculated *rwg* values using uniform null distribution for these variables and obtained for TSL (.74) and for TFL (.75), which both are above the accepted threshold *rwg* value of 0.70 (Castro, 2002). Following the suggestion by Bliese (2000) additional checks were performed. We conducted a one-way analysis of variance and found the between-groups variance for both variables was significant at .001 level. Subsequently we found the following values of the inter-rater reliability index $ICC1 = .56$ and the reliability of group mean index $ICC2 = .59$ for TSL, $ICC1 = .79$ and $ICC2 = .75$; for TFL. As suggested by Schneider, White, and Paul (1998) all values were comparable to the median or recommended ICC values of team-level constructs

reported in the literature. On the basis of these results, we concluded that data aggregation for transactional and transformational leadership styles was justified.

3.4 Results

3.4.1 Descriptive statistics

The constructs (role ambiguity, ambidextrous leadership problem-solving creativity, new product performance) meet the requirement of construct reliability since their composite reliabilities (CR) are greater than .7 (Nunnally, 1978) (Table 3.1). In addition, all constructs achieved convergent validity as their average variance extracted (AVE) rates surpass the .5 level (Fornell and Larcker, 1981) (Table 1). For discriminant validity, we compared the square root of AVE (i.e., the diagonal in Table 3.2) with the correlations between constructs (i.e., the off-diagonal elements in Table 3.2). The computed values were higher than the off-diagonal correlation values (Hulland, 1999) showing the discriminant validity of the measures (see Table 3.2).

Table 3.1 Construct measures

Items	Loading	t-values
Problem solving creativity ^a (α =.86 ; CR=.90; AVE = .72)		
In this department/team, for new product development project(s)...		
the solutions found and implemented cost us less than in previous ones.	.70	35.43
we came up with lower-cost solutions for problems than we expected.	.86	44.73
in general, solutions found and implemented for problems were creative.	.92	46.64
solutions to problems generated fresh thinking in our firms.	.89	47.30
New product performance ^c (α =.92 ; CR= .94; AVE = .81)		
Compared to objectives, over the past 1 year ...		
revenues from new products was...	.94	39.90
growth in revenue from new products was...	.95	43.66
growth in sales of new products was...	.94	40.40
profitability of new products was...	.76	43.65

Role ambiguity^a ($\alpha = .83$; CR= .94; AVE =.77) (reverse coded)**In my job...**

clear, planned goals and objectives exist.	.86	41.81
i know exactly what is expected of me.	.93	66.23
i know how my performance is going to be evaluated.	.84	59.09

Transactional leadership^b ($\alpha = .84$; CR=.89 ; AVE =.69)**In this firm...**

my CEO points out what I will receive if I do what is required.	.87	67.49
my CEO tells me what to do to be rewarded for my efforts.	.89	49.27
my CEO is alert for failure to meet standards.	.72	59.27
my CEO works out agreements with me on what i will receive if i do what needs to be done.	.82	56.09

Transformational leadership^b ($\alpha =.94$; CR= .96; AVE =.78)**In this firm...**

my CEO communicates a clear and positive vision of the future.	.88	60.87
my CEO treats staff as individuals, supports and encourages their development.	.89	64.16
my CEO gives encouragement and recognition to staff.	.80	66.14
my CEO fosters trust, involvement and cooperation among team members.	.92	53.49
my CEO encourages thinking about problems in new ways and questions assumptions.	.91	53.62
my CEO is clear about his/her values and practices what he/she preaches.	.87	57.81
my CEO instils (i.e., inspires, creates) pride and respect in others and inspires me by being highly competent.	.91	60.42

^a The scale format for each of these items was 1= “strongly disagree” and 7= “strongly agree”

^b The scale format for each of these items was 1= “not at all” and 7= “frequently if not always”

^c The scale format for each of these items was 1= “much worse ” and 7= “much better”

Table 3.2 Descriptive statistics and correlations

	Variables	Mean	SD	1	2	3	4	5	6
1	Problem-solving creativity	5.10	1.20	.85					
2	New product performance	5.05	1.26	.79**	.90				
3	Role ambiguity	5.70	1.08	-.27**	-.28**	.89			
4	Transactional leadership	5.08	.85	.38**	.33**	-.49**	.83		
5	Transformational leadership	5.58	.96	.27**	.17*	-.42**	.67**	.88	
6	Ambidextrous leadership	-	-	.31**	.14*	-.41**	.46**	.65**	-

Note: SD = Standard deviation; **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). Diagonal elements in bold are the square roots of the average variance extracted for constructs measured reflectively with multiple items.

3.4.2 Test of hypothesis

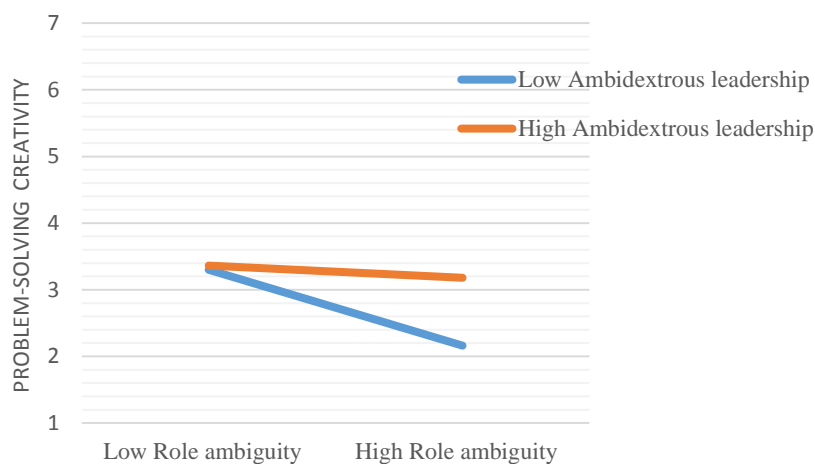
To test the hypotheses, hierarchical multiple regression analysis was undertaken. Table 3.3 summarises the regression results for the effects of problem-solving creativity on new product performance, the direct effect of role ambiguity and moderation effect of ambidextrous leadership on role ambiguity - problem-solving creativity relationship. In Model 1, we included control variables, and the results suggested that none of them has a significant influence on new product performance. In model 2, we added problem-solving creativity, and it has a positive and significant influence on new product performance ($\beta = .78$, $t\text{-value}=14.89$), thus providing support for H1. In model 3 we added role ambiguity, it has a significant negative influence on problem solving creativity ($\beta = -.33$, $t\text{-value}= -4.43$).

In model 4 and 5 we added the moderating variable (ambidextrous leadership) and the interaction term between role ambiguity and ambidextrous leadership respectively. In order to operationalise ambidextrous leadership we followed a similar logic to recent work of Lin, McDonough, Lin, and Lin (2013); Luo, Zheng, Ji, and Liang, (2016); Rosing, Frese, and Bausch (2011) suggesting integration of the CEOs' transformational and transactional leadership. Transactional and transformational leadership variables were mean centred before generating the product terms to avoid multicollinearity. Then we obtained the scores of ambidextrous leadership by multiplying mean-centered values of transactional and transformational leadership dimensions. The interaction term was positive and significant ($\beta = .24$, $t\text{-value}=2.44$) suggesting that ambidextrous leadership moderates and buffers the negative effects of NPD manager's role ambiguity on NPD teams' problem-solving creativity. This result provides support for H3. Figure 3.2 reveals significant interaction between NPD manager's role ambiguity and ambidextrous leadership, emphasising the potential to neutralise the negative effect of NPD manager's role ambiguity on NPD team's problem-solving creativity in the case of a strong CEO's ambidextrous leadership.

Table 3.3 Hierarchical regression results

	New product performance		Problem-solving creativity		
	Model 1	Model 2	Model 3	Model 4	Model 5
Control variables					
Firm size	.05(.60)	.04(.66)			
Firm age	-.10 (-1.24)	-.02(-.31)			
Direct effect					
Problem-solving creativity		.78*** (14.89)			
Role ambiguity			-.33** (-4.43)	-.22** (-2.83)	-.34** (-3.73)
Moderation effect					
Ambidextrous leadership				.27** (3.35)	.10(.83)
Role ambiguity × Ambidextrous leadership					.24* (2.44)
Overall R ²	.02	.64	.27	.33	.36
Adjusted R ²	.01	.63	.25	.31	.33
F- Values	6.5**	28.09***	12.63***	16.01***	11.88***
R ² Changes	.00	.62	.00	.06	.03

* $p < .05$, ** $p < .01$ *** $p < .001$

Figure 3.2 Moderation effects of ambidextrous leadership

3.5 Discussion

In this study, we sought to deepen understanding of how problem-solving creativity generates superior new product performance in local BoP firms, and whether intra-organizational factors (such as role ambiguity and leadership) impede or facilitate problem-solving creativity in local BoP firms. We contended that cultivating capacities to support problem-solving skills is critical

in NPD teams. This helps to provide solutions for a given problem through new products. However, team creativity might be undermined by the NPD manager's role ambiguity. While role ambiguity has a negative effect, astute leaders who are ambidextrous deploying both transactional and transformational can help to minimise job uncertainty and create role clarity to enable NPD team members to be more creative. Through this process of managing the workplace contexts in NPD teams, superior new products are created, and new product success is ensured. The study also offers several important implications for research.

First, the study brought together three distinct streams of literature including NPD, creativity, and leadership to explore the antecedents and outcome of problems solving creativity. Historically research has long emphasised market knowledge competence (Atuahene-Gima & Wei, 2011) and internal and external knowledge sharing (Carmeli et al., 2013) as ways to enhance problem-solving creativity and new product performance. In this study, we found that problem-solving creativity is a key asset for firms to sustain superior new product performance in BoP markets. Our findings brought a new explanatory variable on problem-solving creativity namely role ambiguity. We found that the negative relationship between role ambiguities -as a workplace behaviour- and problem-solving creativity varied on the account of ambidextrous leadership. These findings support our prediction on the critical role of ambidextrous leadership in neutralising the negative impact of role ambiguity on problem-solving creativity to drive new product performance.

Second, the study responds to calls for investigation of SET insight into creativity research (see Anderson et al., 2014; Barmmenst, 2016; George, 2007) based on three broad categories of antecedent variables including team and individual factors (e.g., personality traits, thinking styles, motivation), the work context (e.g., job complexity, job requirements), and the social context (e.g., leadership styles, social networks). Drawing on SET, the study findings indicate to what extent the relationships (between leaders and followers) together

affects team's problem-solving creativity and new product performance. As such we advanced the view that team leaders and members leverage their relationship within the firm to achieve team's problem-solving creativity and new product performance. More specifically, we extend the application of SET into the context of BoP firms and their NPD activities. Based on social exchanges, problem-solving creativity can be enhanced through the creation of a supportive environment (job clarity, supportive leadership) as it might be indicated by the employees' perceptions to feel obliged to reciprocate by engaging in pro-organisational behaviours in NPD. This underscores the crucial role of leadership in creating clear goals and objective in jobs, and further supports NPD team's problem-solving creativity as a key capability for superior new product performance.

Third, since our sample comes from Sub-Saharan Ethiopian BoP market, our results contribute to NPD, creativity, and leadership literature beyond the generic assumptions. These assumptions essentially neglect team motivational and organisational contextual factors but widely focus on the impact of transformational leadership on individual creativity (Gumusluoglu & Ilsev, 2009; Im & Workman, 2004). Nevertheless, our study engender creativity understanding on a more specified context (i.e., NPD team) rather than individual creativity. Our contribution is further enhanced by drawing attention to the BoP contexts as a unique study setting in addressing managers and team members work environment. Operations within BoP firms are significantly characterised by lack of communication and essential job-related information and receipt of varying job messages from different role managers. These unique BoP contextual factors hinder managers from using creative thinking for solving consumer problems. Moreover, the study provides new insight and confirm that when the widely practised leadership style in BoP, which is transactional leadership, is complemented by transformational leadership, it can influence important work outcomes such as better

problem-solving creativity and new product success through clear and planned objectives in jobs.

3.5.1 Practical implications

Given problem-solving creativity is vital for BoP firms' success, understanding its antecedents and boundary conditions is important for managerial development. Our findings provide key implications for local firm managers and leaders doing business in BoP markets. First, in BoP, problem-solving creativity is an important team level endeavour because it is a key capability for manufacturing firms to achieve superior product success. Undeniably, NPD department managers and team members are directly involved in NPD activities, and their ability to creatively provide solutions is a key input to the innovation process. Firms should manage to provide managers and team members with training on how to provide solutions creatively. Firms may put training sessions and techniques such as brainstorming and mind-mapping. Further firms may motivate NPD teams and members who come up with winning ideas on problem solving by actively recognising creativity, for example through rewarding scheme.

Second, in the growing competitive BoP market, it is vital for BoP firm leaders to develop and possess qualities of transactional and transformational leadership simultaneously to succeed in the market. Thus BoP firms should provide training to executives and senior managers on the usefulness of ambidextrous leadership for success. This highlights firms should initiate appropriate training, coaching, and development to give ambidextrous leaders opportunities to improve their ability to inspire their subordinates (managers and team members) to provide solution creatively through intellectual stimulation, individualised consideration, and charismas well as contingent reward and management exceptions. Our research indicates that leaders who exhibit ambidextrous leadership behaviour are likely to provide clear and planned objectives and goals in jobs. CEOs' ambidextrous leadership can

improve the ability of middle-level managers and employees and increase the performance of their organisation. Managers benefit from ambidextrous leadership that is also important in creating role clarity. Such leadership behaviour is particularly relevant in complex, and challenging conditions in the BoP context (Chebbi et al., 2016).

Third, senior managers can improve team creativity and performance of their organisations if they involve in ambidextrous leadership style, and further these managers should engage in development of NPD goals, use different techniques to improve team members' knowledge of NPD practices and encourage idea and knowledge sharing among the team members.

Overall, effective problem solving is a key foundation of creativity for both leaders and managers in organisations (Bateman, 2010), and top-level managers in BoP firms need to pay attention to it. Furthermore, managers need to learn how to accommodate the benefit of problem-solving creativity while at the same time mitigating the potential negative effect of role ambiguity through supporting leadership. The management should develop training and development programs focusing on leadership skills (such as communication, commitment and feedback) and behaviours that enable clear communication and understanding between the NPD team leaders and the employees with regard to role responsibilities and expectations.

3.5.2 Limitations and future research

Our research has specific limitations that should be acknowledged. These limitations also open up opportunities for future research. First, our findings offer support for our predictions however limitations associated with cross-sectional design need to be considered. Further research may adopt a longitudinal design to examine additional antecedents and moderators (i.e., team size, team efficacy, and team innovativeness) of problem-solving creativity for superior new product performance. Second, another limitation of this study could be our focus

on managers (i.e. new product development, and marketing managers). We did not survey employees in marketing and NPD departments. Employees in these departments may hold an alternate view of problem-solving creativity and the existence of clear, planned goals and objectives in their jobs.

Third, even though Ethiopia is an appropriate BoP context; other non-BoP markets may present different patterns of behaviours and environmental characteristics. Hence, testing our model in other non - BoP countries may provide more insight on the leadership – creativity – performance relationship. Fourth, as stated above the sample in our study was obtained from the Sub-Saharan Africa country, the region is known for its higher power distance and collectivism cultural dimensions (Hofstede, 2001). These cultural dimensions may affect the extent to which social exchanges are perceived in NPD teams. Thus, a fertile avenue for future research is to investigate whether cultural dimensions moderate the effect of role ambiguity on problem-solving and the impact of problem-solving creativity on new product performance. Finally, the conceptual framework in this study is developed and shown to be applicable to manufacturing firms. To investigate whether the relationships can be generalised, future research may apply the framework in service sectors.

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Chapter 4

Leveraging local manufacturers' ability to offer affordable products and enhance new product performance in bottom of the pyramid markets

Under review at the European Journal of Marketing

Abstract⁴

Purpose – As developing economies liberalise, local manufacturing firms operating at the Bottom of the Pyramid (BoP) are increasingly competing not only against one another, but also against growing numbers of foreign firms marketing their products in BoP markets. In these competitive and resource-constrained markets, local BoP manufacturers' must strive to develop new products that are appealing to BoP consumers. Successful development of new products may, however, rely on the ability of the local firm to collaborate with suppliers and customers, as well as how the firm position itself and its products in the market. Drawing on social capital and institutional theory this study aims to examine how collaboration with customers and suppliers contributes to BoP manufacturers' new product advantage to en route affordability and new product performance.

Design /method/approach – The proposed hypotheses are tested using data drawn from a multi-informant survey of marketing managers, product development managers of local manufacturers in Ethiopia, and their respective business customers (i.e., retailers & merchandisers).

Findings –The study finds that new product advantage is advanced through collaboration with business partners and firms can generate twofold benefits from new product advantage including affordability and superior new product performance. Moreover, the impact of collaboration on new product advantage to en route affordability and superior new product performance relies on the level of the market turbulence and competitive intensity.

Originality/value – Employing source-position-performance framework, social capital, and institutional theories, the study provides insights on how local BoP manufacturers can deliver

⁴ Abstract is set based on the guidelines of European Journal of Marketing.

affordable products to customers and enhance the financial performance of their new products in an understudied context.

Keywords – Bottom of the Pyramid, BoP, customer collaboration, supplier collaboration, new product development, new product advantage, affordability

Paper Type – Research paper

4.1 Introduction

About 4 billion consumers who live at the Bottom of the Pyramid (BoP), in underdeveloped countries face ongoing challenges in making ends meet in their daily life (Gupta and Sesa, 2015)⁵. Given the growth of BoP markets and the hardship consumers experience in these markets, researchers, politicians, and business leaders have initiated a push to elevate the living standards of these consumers by providing new products that are affordable and meet BoP market needs (Abendroth and Pels, 2017). Yet, most BoP research has focused on how Western firms operate and survive in BoP markets, with little attention given to how local BoP firms which originate in the local community and are owned by locals can successfully serve BoP markets (London *et al.*, 2010). Specifically, there is a lack of understanding of how local BoP firms can successfully manage their business to improve performance and serve the BoP consumer (Calton *et al.*, 2013). The success of local BoP firms is necessary because beyond providing products that suit the needs of these markets, they create employment for locals and elevate consumers' wellbeing (Kalungu, 2009).

Local BoP firms seek ways to respond to competitors including other local and foreign firms by developing new products that create value for both customers and the firm (Bland and Hamann, 2015). One approach found in the literature for firms to maintain value for both customers and themselves, is gaining product advantage through offering low cost and differentiated new products (Kim and Atuahene-Gima, 2010). However, gaining a product advantage is a resource-intensive activity, and BoP firms often lack product-related resources and capabilities in developing new products (Simanis and Duke, 2014). So while achieving product advantage is valuable and a logical pursuit, the BoP literature fails to address how local

⁵ In-text citations and reference lists are presented based on the guidelines of European Journal of Marketing.

manufacturers at the BoP enhance their resource base and advance their internal processes to engage in successful new product development (NPD).

Literature supports the view that collaboration with suppliers and customers can enhance competitiveness by improving the firm's resource base and internal processes (Heirati and O'Cass, 2016) that are necessary to develop new products that are affordable and differentiated (Candi *et al.*, 2016). However, collaboration at the BoP might be more challenging compared to Western (developed) business environments because of the unique institutional challenges that govern the BoP environment (Gold *et al.*, 2013; Parmigiani and Rivera-Santos 2014). These challenges arise due to the less developed legal and regulatory processes, inadequate market-supporting institutions, and weak enforcement capacity of regulatory and legal institutions (Goyal *et al.*, 2016; Boso *et al.*, 2013). The uncertainty resulting from less advanced legal systems may encourage local BoP firms to engage in collaborative behaviour to decrease the risk associated with NPD (Parker, 2000). However, within less advanced institutional systems there may be resistance to collaboration as firms seek to protect themselves from partners' opportunistic behaviours (i.e., self-interest seeking with guile) when there is less support from authorities and legal systems.

Knowledge about the role of collaboration in NPD has advanced in developed and developing markets such as North America, Western Europe, Australia and some middle eastern countries (Baker *et al.*, 2016; Foss *et al.*, 2011; Heirati and O'Cass, 2016; Heirati, *et al.*, 2016; Menguc *et al.*, 2014). However, generalisability of findings from other developed markets to BoP markets can be detrimental given the unique institutional challenges and characteristics of BoP markets (Schuster and Holtbrügge, 2014). The literature focusing on NPD at the BoP is not very informative about how customers and suppliers collaboration can enhance NDP and new product performance (Brettel and Cleven 2011). In particular, research

is limited in unravelling the extent to which collaboration with customers and suppliers contributes to local BoP manufacturers' new product advantage.

It is argued that institutional voids can be minimised by increasing collaborative initiatives embedded in social capital (Boso *et al.*, 2013). Drawing on social capital and institutional theories this study extends Day and Wensley's (1988) new product advantage model by focusing on local BoP manufacturers' collaboration in the context of NPD. The contribution of this research is two-fold. First, we advance theory by scrutinising the impact of customers and suppliers collaboration to understand how affordability and new product performance can be achieved in the BoP market. To the best of our knowledge, this study is among the few to investigate these relationships, especially among local BoP firms. To date, NPD research has mostly focused on multinational firms operating in BoP markets (e.g., Ernst *et al.*, 2015; Schuster and Holtbrügge, 2012; 2014). These firms do not have the same constraints that local BoP firms have (Webb *et al.*, 2010). Second, collaborative arrangements and new product outcomes in BoP markets are likely to get affected by both industry and market conditions. As such, we advance the view that the positive effect of collaboration on new product advantage is contingent upon ongoing changes in BoP markets. We extend the current literature on BoP by exploring market turbulence as a contingent marketplace characteristic impacting collaboration's effect on creating new product advantage. Similarly, we examine the twofold role of competitive intensity as a moderator on the relationship between new product advantage and performance outcomes. Given our focus on local BoP manufacturing firms, our findings provide context-specific guidance for BoP firms to pursue successful NPD.

4.2 Conceptual framework and hypotheses development

4.2.1 Social capital theory and institutional theory

It has been argued that a firm's success is influenced by the nature of its collaborative relationships with its business partners including customers and suppliers (Acquaah, 2007; Ansari and Munir, 2012; Baker *et al.*, 2016). Collaboration is embedded within the notion of social capital (Tan *et al.*, 2015). Social capital is the sum of actual and potential resources embedded within, available through, and derived from the network of relationships and collaboration by an individual or social unit (Acquaah, 2007). Social capital helps explain how collaboration with external parties can improve firm's NPD processes and performance (Boso *et al.*, 2013) as product innovation does not always occur in isolation and is the result of interactions and exchanges of important resources amongst actors in the business environment (Gu *et al.*, 2013).

Important resources may include market and technical knowledge (see Inkpen and Tsang, 2005; Lawson *et al.*, 2009). Through collaboration, knowledge is shared and new ideas are advanced to develop affordable and differentiated new products (Carely *et al.*, 2011; Rass *et al.*, 2013). Collaboration is defined as the extent to which a firm involves customers and suppliers in its NPD activities (Al-Zu'bi and Tsinopoulos, 2012; Foss *et al.*, 2010). Brettel and Cleven (2011) argue that collaboration with customers is positively related to NPD performance in that customers are an important source of knowledge and market familiarity for firms in the NPD process. Similarly, Foss *et al.* (2011) identify collaboration with the customer as a new organisational practice in the context of absorbing and leveraging customer knowledge that improves the firm's innovation performance.

Collaborating with suppliers is another important way for a firm to access resources and to improve product innovation performance (Tsai, 2009). Ho and Lu (2015) find that suppliers are important sources from which firms gather market knowledge. Similarly, it has

been argued that early collaboration with suppliers during the NPD process leads to higher technical knowledge for the improvement of products, processes, and product variety (Al-Zu'bi and Tsinopoulos, 2012).

However, under less developed institutional and legal systems in BoP countries, collaboration might be challenging as partners may engage in opportunistic behaviours⁶, and there is less support from authorities (government officials and political leaders) to counter such behaviours (Hahn and Gold, 2014; Sheng *et al.*, 2011). As such, collaboration might be a double edge sword and partners may be concerned about engaging in collaborative behaviours. The institutional theory provides a suitable foundation to explain why BoP firms engage in collaboration when faced with an unpredictable business environment (Yang and Su, 2014). According to institutional theory, the behaviour of a firm can be understood based on its external environment, and it helps to justify how various stakeholders secure their position by complying with the norms and rules of the institutional environment (Yang and Su, 2014). Institutions differ across countries regarding laws and regulations and enforcement apparatus (Webb *et al.*, 2010).

In BoP countries, institutional voids such as thin capital markets, lack of skilled manpower, weak legal enforcement, and a lack of strong financial intermediaries, inhibit firms' operations and development including constraining a firm's motivation and ability to invest in NPD projects (Webb *et al.*, 2011; Zhou *et al.*, 2017). One way to address such institutional voids is to connect with the retailers and merchandisers (customers or suppliers). The connection can influence NPD initiatives through resource allocation (Acquaah, 2010; Zhou *et*

⁶ Opportunistic behaviours is defined as a condition of self-interest seeking with guile (Williamson, 1985). Opportunism is a major concern for firms operating in emerging markets lacking market-support institutions that may exist in many forms such as including lying, cheating and calculative efforts to maximize individual returns (Zhu, Su, and Shou, 2017).

al., 2017). NPD practice often requires substantial resources, but access to market knowledge and financial resources in BoP economies that are heavily controlled by institutions (specialised intermediaries, market-supporting institutions) is challenging (Ernst *et al.*, 2015). Local BoP Firm may bypass institutional voids and the need for these resources through effective collaboration.

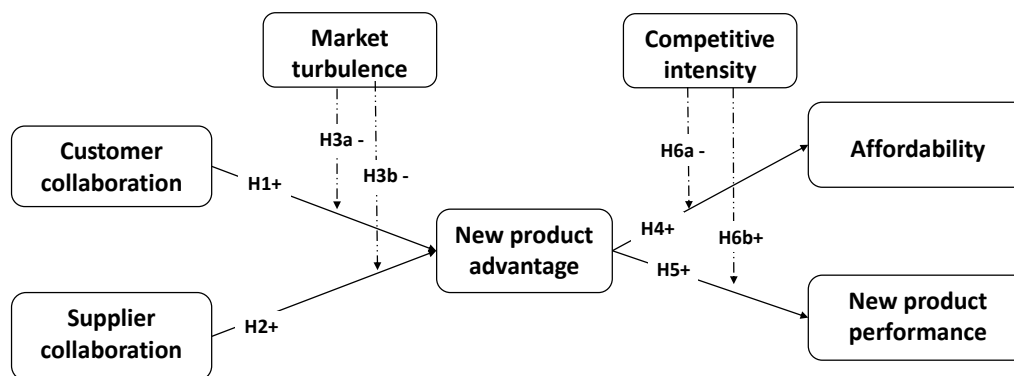
4.2.2 Sources of new product advantage

New product advantage is driven by both distinct internal resources and resources beyond the firm's boundaries that are leveraged through collaboration (Baker *et al.*, 2016). New product advantage is defined as the degree to which a product offering is superior to competing products regarding features and affordability (Kim and Atuahene-Gima, 2010). The source–position–performance (SPP) framework developed by Day and Wensley (1988) helps to analyse critical sources required to foster new product advantage. In terms of firms' advantage seeking behaviours, Day and Wensley (1988) explain how resources support the ability to do “more” and “better” in NPD to achieve new product advantage. These supportive resources may come from collaboration to support the market value of new products and ultimately create superior new product outcomes (Day, 1994). Market value may be found in the form of cost efficiency and product differentiation (Kim and Atuahene-Gima, 2010; Yan and Dooley, 2014). In this study cost efficiency refers to decreases in the cost of production in the firm (Kim and Atuahene-Gima, 2010). New product differentiation refers to the characteristics of the new product that are distinctive and provide unique value to customers (Kim and Atuahene-Gima, 2010).

New product offerings for BoP markets must meet the price and feature requirements of BoP customers (Agnihotri, 2015). In BoP markets, customers are price sensitive and prefer to spend their limited income on products that are less complex, functional and satisfy their

primary needs (Anderson and Billou, 2007; Ernest *et al.*, 2015; Nakata and Weidner, 2012; Viswanathan and Sridharan, 2012). At the same time, BoP consumers seek differentiated products that deliver superior quality, functionality, reliability, and robustness (Brem and Wolfram, 2014; Ernst *et al.*, 2015). Development of these types of products for BoP manufacturers may be challenging as a variety of resources are needed to mobilise the firm to offer new products in environments with significant constraints (Chikweche *et al.*, 2012). One specific mechanism facilitating access to additional external resources to create new product advantages, maintain superior and affordability, and ensure stronger new product performance is collaboration with business partners (Brettel and Cleven, 2011; Ernst *et al.*, 2015). Building on this theoretical foundation, this study proposes a model (see Figure 4.1) outlining the drivers and contingencies of new product advantage and its influences on affordability and new product performance.

Figure 4.1 Theoretical model



4.2.3 Collaboration and new product advantage at the BoP

Customer collaboration. There has been growing interest in the role of customers within product innovation and NPD (Chesbrough, 2003; Foss *et al.*, 2011; Silva and Leitão, 2009). This interest signifies that customers can play a key role in the firm's innovation and NPD activities (Dvorak, 2013). The customer can help firms to avoid difficulties related to poor product design and inappropriately conceived market introductions (Foss *et al.*, 2011). Customers can be a source of ideas about new products and solutions and helpful in understanding and identifying new market trends (Kruitbosch, 2010; Prahalad and Ramaswamy, 2004).

In BoP markets where firms are resource constrained, accurate, relevant, and on time knowledge can help them to advance their internal processes and develop a new product that offers an advantage against competitors in the market. Knowledge can be transferred to the firm through customers (e.g., retailers, or end-consumers). Customers may possess technical and market knowledge (Heirati and Siahtiri, 2017) that the firm can capture by increasing the interaction with them (Ordanini and Parasurama, 2011). Interaction allows the firm and customers to discuss market trends and together develop products that are unique and different from other products in the market.

Further, customers may also have knowledge about available products in the market (Tsai, 2009). When the firm frequently interacts with customers, the deficiencies in available products in the market become available and deployable (Menguc *et al.*, 2014). As such, the firm will acquire deep understanding on the advantages and deficiencies of available products in the market and can work to overcome such deficiencies in their new products. Customers are sources of ideas for new products' features and attributes (Kruitbosch, 2010). Customer collaboration can lead to the development of new products with features and specifications that are unique and valuable for manufacturers and their customer (Praceus, 2014). Moreover,

according to social capital theory, the flow of knowledge coming from customers to the firm can assist the firm to develop products that decrease the total cost of manufacturing through early accessibility of prototypes and fewer errors in the early development stages (Baker *et al.*, 2016; Lynch *et al.*, 2016) . In BoP markets where knowledge asymmetry is dominant, access to the knowledge coming from customers can decrease the knowledge gap between the customer and the firm and allow the firm to produce new products that are more targeted and ultimately increases efficiencies. Therefore,

H1. In BoP firms, customer collaboration is positively related to new product advantage.

Supplier collaboration. In BoP markets, the distribution infrastructure and institutional structures are underdeveloped (Sodhi and Tang, 2016). Collaboration with suppliers allows a local BoP manufacturer to adapt itself to the institutional changes by accessing critical resources (i.e., bundles of experiences and knowledge). Accessing resources may mitigate the constraints local BoP manufacturers face and may facilitate the development of new products with unique features. For example, any local manufacturer at the BoP who effectively uses its networks and relationships with other local suppliers may access deeper and broader knowledge of the market and can use this as an input for identifying specification of products that fit the market in terms of costs and benefits (Jenkins *et al.*, 2008).

Building on Gold *et al.* (2013) we argue that the positive effect of supplier collaboration on NPD is related to the supplier's expertise regarding the parts and components that are critical for new products. In this sense, collaboration with suppliers allows early identification of components and specifications at the initial stages of new product design. These activities enable the local BoP firm to recognise discrepancies, shortages and associated costs of a new product at the early stages, to effectively reduce the risk of new product failure. Furthermore,

the contribution of suppliers in NPD may assist in exchanging ideas about accessing new sources of raw materials which can decrease the cost of production of new products. Moreover, when a supplier and firm collaborate in estimating lead times and development cycles, the firm will be able to decrease risks and project market availability more accurately (Dinda, 2015; Pujari, 2006) and consequently the cost of operation is reduced. Thus, collaboration with suppliers will help local BoP manufacturers to benefit from the expertise, and complementary knowledge of suppliers to gain familiarity with the existing channels to differentiate their new products and enhance the cost efficiency of manufacturing processes. Therefore,

H2. In BoP firms, supplier collaboration is positively related to new product advantage.

4.2.4 Moderating effects of market turbulence

Market turbulence has a considerable impact on a firm's efforts to achieve better positions in the market (Kim and Atuahene-Gima, 2010; Langerak, 2003). It is defined as the degree of change in customer preference for products in an industry (Jaworski and Kohli, 1993). A turbulent market is characterised by frequent and unpredictable changes in customers product preferences and needs. Due to unpredictable income, lack of financial resources, increasing awareness of actual needs, and growing competition by international companies, customers' demands and product preferences may frequently change in BoP markets (Chikweche *et al.*, 2012). Offering value-laden products and fulfilling the unique needs of BoP customers who lack financial resources are complex and challenging.

Taking full advantage of collaboration with customers and suppliers during NPD should be possible under reasonably stable market environments (Wang *et al.*, 2015). Familiarity and networking with current customers and suppliers may help BoP manufacturers to improve their understanding of the market. As such, firms can adjust their NPD activities based on the market

demands and therefore achieve a better product position in the market for new products. The knowledge and experience gained through collaborative relationships with customers and suppliers throughout the NPD process can be fully beneficial only when the external market environment does not change very quickly (Tsai and Yang, 2013) because less adjustment in operation and process are required to meet market demands. However, under highly turbulent market conditions, local BoP firms have to keep changing and updating their internal processes to catch up with market changes and demands (Langerak, 2003). Given the resource-constrained conditions in BoP markets, firms will not be able to upgrade their products and process actively, and thus product differentiation is impaired and costs of production increase.

As such, under turbulent market conditions, collaboration impairs firms' new product advantage, and collaborators may not be able to adjust themselves to the sudden changes in market conditions and confusion arises and efficiencies decrease. When collaboration is high, this confusion is transferred to other parties, and the capacity to offer problem-solving and value-laden products decreases. In BoP markets with high levels of market turbulence, past successful experiences will become outdated and invalid due to BoP firms' failure in responding timely to a sudden change in customers' preferences. However, when market turbulence is low rather than high, collaboration with customers and suppliers may drive new product advantage. Therefore,

H3_a. In BoP firms, market turbulence negatively moderates the relationship between customer collaboration and new product advantage.

H3_b. In BoP firms, market turbulence negatively moderates the relationship between supplier collaboration and new product advantage.

4.2.5 New product advantage and its effect on affordability and new product performance

Prior studies focusing on developed Western countries have validated the significant role of new product advantages in the forms of differentiation and cost- efficiency in enhancing firm performance (Lisboa *et al.*, 2016; Murray *et al.*, 2011). We define new product performance as the degree to which the firm achieves its new product goals in terms of revenue, sales volume, market share, sales growth, profitability, and customer satisfaction (Story *et al.*, 2015). New product advantage brings a twofold benefit to firms that includes minimal NPD cost (i.e., superior new product performance) and distinct value (i.e., affordability) for the customer (Kim and Atuahene-Gima, 2010).

Local firms at the BoP face competition from both local and overseas firms. To a large extent their new product success in their market relies upon their ability to attain new product advantage (cost efficiency and differentiation) which assists in delivering superior value to consumers by meeting their low price expectations (Acquaah, 2007). BoP firms' achievements on cost efficiency and differentiation can be realised by keeping production cost as low as possible to meet customer expectations of an affordable and value-laden offering products (Kim and Atuahene-Gima, 2010). When local BoP firms pursue differentiation and cost efficiency simultaneously in NPD processes, they create more value for customers because they not only provide distinctive and differentiated utilities to customers but also minimise the cost of NPD and enhance the affordability of the product. Therefore,

H4. BoP firms new product advantage is positively related to affordability.

BoP consumers 'willingness to pay for affordable new products tailored to their needs in term of features are precedents for BoP firms' new product success (Nakat and Weinder, 2011). Beyond incorporating less sophisticated product features, a product in BoP markets

needs to be good in providing core functionality for its success (Agnihotri, 2015). When it comes to success of a product, an appropriate balance between price and value plays a central role (Ernst *et al.*, 2015). Firms can maintain the balance by planning production costs through price checks at each point of the innovation and production processes which can help to minimise costs (Agnihotri, 2015). When product offerings are embedded with unique features and affordable prices, BoP customers may be more inclined to adopt the new products. As a result of customer adoption of the new product and the value, customers perceptions, higher levels of sales and revenue of new product will be achieved in market competition. Therefore,

H5. BoP firms new product advantage is positively related to new product performance.

4.2.4 Moderating effects of competitive intensity

Research highlights the competitive intensity as perhaps the most important external environmental challenge confronting firms (Tsai and Yang, 2013). Competitive intensity is defined as the degree of competition in an industry (Murray *et al.*, 2011). It is related to how various stakeholders and firms better secure their position by complying with the norms and rules of the institutional environment. While the nature of competition is clear, there is still debate about whether greater levels of competition is beneficial or detrimental (see Murray *et al.*, 2011; González-Benito *et al.*, 2014) especially for firms operating in BoP markets where competition is becoming a growing phenomenon. It has been noted that competitive intensity may be a double-edged for firms (Heirati *et al.*, 2016; Tsai and Yang, 2013). First, for local firms which operate in a resource-constrained environment in BoP markets, competitive intensity makes it difficult to withstand promotional and price wars from aggressive competitors from overseas firms. Only local firms with abundant resources can sustain extensive competition over a long period and be able to effectively leverage the competitive intensity in their environment (González-Benito *et al.*, 2014).

Competitive intensity, therefore, is a particularly potent threat to BoP firms and hinders them from providing value-laden affordable products to BoP customers. This is because firms can get trapped into mimicking competitors' actions. As such too much emphasis on the competitor actions distract firms from being creative and offering affordable products. As a result, firms are less likely to achieve cost efficiency and differentiation advantage that outperform competitors (Kim and Atuahene-Gima, 2010). Thus, new product advantage cannot be translated into affordability for customers under a higher level of competitive intensity. Second, the threat of stiff competition can be mitigated through cost-efficient and differentiated features of a product (Kim and Atuahene-Gima, 2010). However, this requires long-term strategic commitment and possible future returns which is less evident in a highly competitive market (González-Benito *et al.*, 2014). Rather in competitive business environments firms tend to focus more on resource conservation and the pursuit of economic advantages and short-term profits (Murray *et al.*, 2011). With higher levels of competitive intensity, we predict two different outcomes. Therefore,

H6_a. In BoP firms, competitive intensity negatively moderates the relationship between product advantage and affordability.

H6_b. In BoP firms, competitive intensity positively moderates the relationship between product advantage and new product performance.

4.3 Research methodology

4.3.1 Research context

This study used a sample of local BoP manufacturing firms operating in Ethiopia. The country fits the key specifications of a BoP market. It has historical economic mismanagement, low-grade infrastructure (electricity and transport networks, telecommunications, water provision, etc.) (Yamada *et al.*, 2018). It also suffers from high levels of poverty and bureaucracy, lack of

professional education and high level of illiteracy (Chakrabarty, 2016; Hauge and Irfan, 2016). Nevertheless, the country has experienced an average GDP growth rate of 10.9% per annum in the last two decades and the number of firms joining the manufacturing sector has increased (Chakrabarty, 2016). The country's economy has been undergoing a transition that comprises the reallocation of workers from the less productive agriculture sector to more productive economic activities in the manufacturing sector (Geiger, 2015). This transition has been a major step towards the creation of job opportunities and growth of manufacturing sectors (Geiger, 2015; Hauge and Irfan, 2016). However, firms in Ethiopia still face substantial obstacles in terms of their ability to obtain the necessary resources for innovation, thus establishing an environment that allows innovation through innovation policy has been the focus of the government for the last two decades (Gebreeyesus, 2013).

4.3.2 Sample and Data Collection

For the study, a sample of local manufacturing firms and their business customers were targeted. From these firms marketing managers, NPD managers and nominated customers were recruited. The use of a multiple-informant design helped minimise concerns about common method bias (Podsakoff *et al.*, 2003). Based on Boso *et al.*'s (2013) recommendation regarding study criteria for innovation research in developing countries, the firms chosen fulfilled the following requirements: Manufacturing firms that were medium or large and engaged in food, health & beauty, shoe, plastic, and energy industries. Firms that have operational NPD and marketing departments and that have at least five years of business experience in the same industry were also included.

The sample population was obtained from the list provided by the Addis Ababa chamber of commerce. From the list, we identified 1000 potential firms meeting our selection criteria, and after contacting them, 220 firms expressed their willingness to participate in the

study. Drop and collect approach was adopted as the data collection protocol to increase response rates (Allred and Davis, 2011) and ensure the surveys were delivered to the correct respondents in each firm. After discounting for the surveys with extreme missing values, 300 completed and matched surveys were received from two groups of managers (at a response rate of 69%). We also liaised with marketing managers to obtain contact information of three customers per firm which resulted in a usable response of 325 customers. A total of 625 usable surveys were collected from the three respondent groups. The firms represented a reasonable dispersion across multiple manufacturing industries: 44% of firms in the sample were in the food sector, 20% in shoe and plastic, 19% in the health and beauty, 16 % in the garment and textile, and 1% others.

4.3.3 Measures

This study adopted measures from the literature, with necessary modifications to fit the BoP context. Three different self-administered surveys were developed to capture data from the marketing manager, NPD manager and customers of each participating local BoP manufacturing firm.

Marketing manager survey. Customer collaboration was measured via three items adopted from Ordanini and Parasurama (2011) via a seven-point scale ranging from 1 ‘strongly disagree’ to 7 ‘strongly agree.’ Supplier collaboration was measured via six items adopted from Al-Zu'bi and Tsinopoulos (2012) using a seven-point scale ranging from 1 ‘not at all’ to 7 ‘a large extent.’ For market turbulence, four items from Theodosiou and Katsikea (2013) were adopted.’ Similarly to reflect the degree of competition in an industry, the study adopted five items from Murray *et al.* (2011). Environmental variables (market turbulence and market intensity) were assessed on a seven-point rating scale ranging from 1 ‘strongly disagree’ to 7 ‘strongly agree.’

NPD manager survey. We adopted the measurement of new product advantage (lower-cost and differentiation) from Kim and Atuahene-Gima (2010) using a seven-point scale ranging from 1 ‘strongly disagree’ to 7 ‘strongly agree.’ We measured cost efficiency and differentiation each using four items. We used four items from Story *et al.* (2015) to measure new product performance in the first 12 months after new product launch relative to the firm’s stated objectives that were obtained. Items were measured using a seven-point scale from 1= ‘Much worse’ to 7 ‘Much better.’

Customer survey. To measure affordability, we adapted items from O’Cass and Sok (2013) and captured both the extent to which the new product reflects the trade-off between cost and benefit and offers value to customers and simultaneously being affordable. Items were measured on a seven-point scale from 1 ‘strongly disagree’ to 7 ‘strongly agree.’

4.3.4 Control variables

We included firm size and firm age because previous studies have shown firm size and age can affect new product performance (Baker *et al.*, 2016). We measured firm size by calculating the natural log of total number of employees (Yao and Chang, 2017) and firm age was measured as the logarithm of the number of years the firms had been operating in the same industry (Singh and Mitchell, 2005).

Finally, in line with established approaches (see Morgan *et al.*, 2012) informant competence measures were assessed based on two key areas (i) knowledge about firms’ business operations, strategies, and business environment and (ii) confidence in answers provided on a seven-point Likert scale (1 = Not at all; 7 = Very much so). The average minimum score obtained was 5, which implied that informants were highly knowledgeable on the issues under investigation and had confidence in the accuracy of their response.

4.4 Preliminary results

Cronbach alpha was used to estimate measure consistency. As Table 1 shows, the alpha values are between 0.71–0.90, exceeding the 0.7 threshold value (Nunnally, 1978). We ran factor analysis (CFA), the factor loadings are used to estimate convergent validity. All factor loadings in Table 1 were higher than the 0.6 criteria (Sharma and Chan, 2011) and all AVEs exceeded the 0.5 benchmark (Fornell and Larcker, 1981). Therefore, factor analysis results demonstrated convergent validity.

Table 4.1 Construct measures

Construct	Items	Factor Loadings
Customer collaboration (AVE=.55, α =.71)	In our firm during new product development process...	
	we interact with customers beyond the activities associated with market research.	.83
	the perceived intensity of customer interaction is high.	.70
	the frequency of meetings with customers is high.	.70
Supplier collaboration (AVE=.71, α =.90)	Our major suppliers have been/are involved in...	
	setting lead time requirements.	.80
	setting product specifications.	.83
	generating products' blueprints/drawings.	.89
	designing product detailed component specifications.	.86
	product prototyping	.87
	overall new product development process.	.82
New Product Advantage <i>Differentiation</i> (AVE=.61, α =.79)	Compared to competing products in our industry, the product(s) we introduced in the last three years...	
	offered some unique features or attributes to the customer.	.87
	provided a higher-quality or better design than other competing products.	.66
	created superior customer services accompanying the product.	.83
	permitted the customer to do a job or do something they could not do with what was available.	.75
<i>Cost efficiency</i> (AVE=.71, α =.86)		.89
	allowed for operating efficiencies (e.g., manufacturing modernization).	
	had cost advantages in raw material procurement.	.76
	provided benefits from economies of scale.	.86
	had minimum manufacturing costs.	.87
Market turbulence (AVE= .66, α =.74)	In our business environment...	
	customers' product preferences change quite a bit over time.	.60
	our customers tend to look for new products all the time.	.94

	new customers tend to have product related needs that are different from those of our existing customers.	.92
Competitive intensity (AVE=.79, α =.81)	Think about your industry characteristics and business environment. Over the past three years...	
	competition in our industry was cutthroat.	.89
	there were many “promotion wars” in our industry	.88
	for anything that one competitor offered, others matched readily.	.84
	price competition was a hallmark of our industry.	.96
	one heard of a competitive move almost every day	.75
New product performance (AVE=.79 , α =.90)	Focus on your firm’s objectives for new products developed and launched. Compared to objectives, over the past 1 year ...	
	revenues from new products was...	.94
	growth in revenue from new products was...	.95
	growth in sales of new products was...	.92
	profitability of new products was...	.73
Affordability (AVE=.56.= , α =.74)	In thinking about this firm’s product(s) ...	
	the products of this firm are priced more suitable for customers	.80
	the products of this firm are priced better compared to competing products	.60
	the products of this firm are more affordable for customers compared to competing products	.78

CC=Customer Collaboration, SC=Supplier Collaboration, New product advantage = NPA, NPD = New product advantage (*DF=Differentiation* \times *CE=Cost Efficiency*), MT=Market Turbulence, NPP=New Product Performance, AV= affordability

Discriminant validity at the construct level was assessed by comparing the average variance extracted to the squared inter-scale correlations (Fornell and Larcker, 1981). As shown in Table 2, the square roots of the AVE values were consistently greater than the off-diagonal correlations, which indicates that discriminant validity has been achieved (Hulland, 1999).

Table 4.2 Descriptive statistics and inter-construct correlations

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1 .Size	2.17	.27	NA									
2. Age	.99	.28	.58**	NA								
3. Customer collaboration	4.7	1.05	-.11	-.09	.75							
4. Supplier collaboration	4.1	1.50	-.01	.05	.30**	.84						
5. Differentiation	5.3	1.01	.03	.03	.12	.10	.81					
6. Cost efficiency	5.5	1.03	.04	-.03	.10	.07	.33**	.78				
7. Market turbulence	4.9	1.35	-.07	-.13	.44**	.35**	.05	.06	.84			
8. Competitive intensity	4.9	1.19	.01	-.08	.26**	.33**	.09	.03	.65**	.88		
9. Affordability	5.3	.87	.03	.13	.07	.17*	.23**	.06	.11	.06	.75	
10. New product performance	5.1	1.22	.02	-.08	.09	.10	.19*	.64**	.08	.07	-.04	.89

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Diagonal elements in bold are the square roots of the average variance extracted for constructs measured reflectively with multiple items.

4.5 Results of hypotheses tests

To test the hypotheses, hierarchical multiple regression analysis was used. As shown in Table 4.3, we ran the control variables in model 1, and had no significant influence on the dependent variables (i.e., new product advantage and new product performance). The results in model 2 indicated that customers and suppliers collaboration have a significant positive relationship with the level of new product advantage. To reflect our research focus and operationalise new product advantage, we followed a similar approach to Acquaah (2007) about simultaneous implementation of low cost and differentiation strategies. While Acquaah (2007) focused on strategy and we focus on outcomes, we believe the application of Acquaah's approach is relevant to product advantage outcomes. We argue that to gain new product advantage and succeed in increasingly competitive market environments, firms need to not only develop new product offerings with features that are meaningful to customers but also to introduce products into the marketplace with an affordable price to customers (Lisboa *et al.*, 2015). We applied the same logic to reflect the importance of achieving cost efficiency and differentiation as critical new product advantages for local BoP manufacturers in serving BoP customers' needs. Building on Acquaah (2007), we argue that to impact affordability and new product

performance strongly, a new product should exhibit affordability and differentiation features as compared to competitors' products in BoP markets.

We computed new product advantage in this study by generating the product term of cost efficiency and differentiation advantages. We first mean centred cost- efficiency and differentiation constructs before generating the product term to avoid multicollinearity. The results in model 2 indicate that customer collaboration has a positive relationship with new product advantage ($\beta = .17$; $p < t\text{-value}=2.06$) supporting H₁. Further, H₂ predicts that supplier collaboration is positively related to new product advantage ($\beta = 0.16$; $t\text{-value}=2.01$). H₂ is supported.

In model 3 the moderating variable market turbulence is included in the estimation. The result in model 4 shows that market turbulence negatively moderates the relationship between customer collaboration and new product advantage ($\beta=-.16$, $t\text{-value}=-2.02$). Thus H_{3a} is supported. The plot in Figure 4.2 shows that at a higher level of market turbulence the positive effect of customer collaboration on new product advantage diminishes. However, a positive moderation effect by market turbulence exists on the relationship between supplier collaboration and new product advantage, but is not statistically significant ($\beta = 0.11$; $t\text{-value}=1.26$), failing to support H_{3b}.

H₄ indicates that new product advantage is positively related to affordability hypothesis ($\beta = 0.17$; $t\text{-value}=2.07$) in model 5. The finding supports H₄. In model 6 we included competitive intensity as a moderating variable. The moderation effect of competitive intensity on new product advantage and affordability relationship in model 7 shows negative and significant ($\beta=-.19$, $t\text{-value}=-2.43$). Therefore H_{6a} is supported. Figure 4.3a shows that the positive effect of new product advantage on affordability diminishes at high levels of competitive intensity.

Table 4.3 Hierarchical regression results

Variables	New product advantage				Affordability			New product performance		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Control variables										
Size	.07(.75)	.08(.87)	.09(.88)	.07(.74)				.05(.60)	.04(.57)	.02(.24)
Age	-.04(-.45)	-.03(-.39)	-.04(-.37)	-.03(-.29)				-.10(-1.24)	-.10(-1.20)	-.08(-.98)
Direct effects										
CC		.17*(2.06)	.14*(2.01)	.16*(2.03)						
SC		.16*(2.01)	.14(1.69)	.19*(2.09)						
NPA					.17*(2.07)	.16*(2.01)	.14*(2.05)	.58**(8.54)	.57**(8.45)	.59**(8.71)
Moderation effects										
MT			.01(.14)	-.02 (-.25)						
CI						.05(.58)	.05(.61)		.03(.38)	.02(.36)
CC × MT				-.16* (2.02)						
SC × MT				.11(1.26)						
NPA×CI							-.19*(-2.43)			.14*(2.01)
Overall R ²	.05	.10	.11	.14	.03	.04	.07	.33	.32	.34
Adjusted R ²	.00	.04	.04	.10	.02	.02	.05	.33	.33	.35

* $p < .05$, ** $p < 0.01$

As indicated in model 8 new product advantage has a positive and significant effect on new product performance ($\beta=.58$, $t\text{-value}=8.54$). Consequently, H5 is empirically supported. Finally, in support of H6_b, model 10 suggests that the moderation effect of competitive intensity on new product advantage and new product performance relationship is significant and positive ($\beta=.14$, $p<. t\text{-value}=2.01$). Figure 4.3b shows that competitive intensity positively moderates the relationship between new product advantage and new product performance.

Figure 4.2 Moderation effects of market turbulence

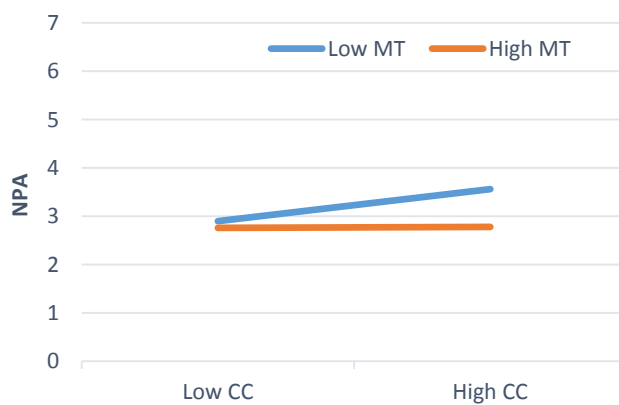
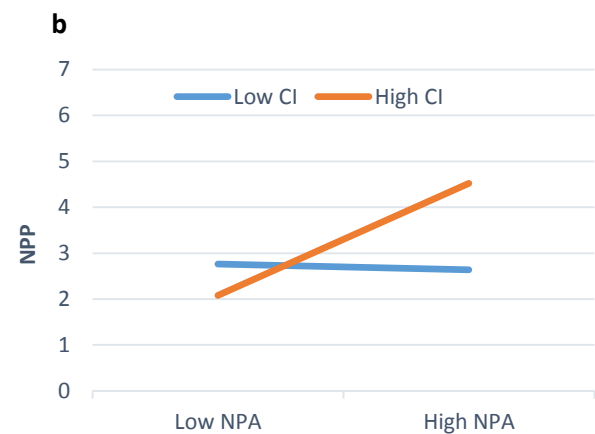
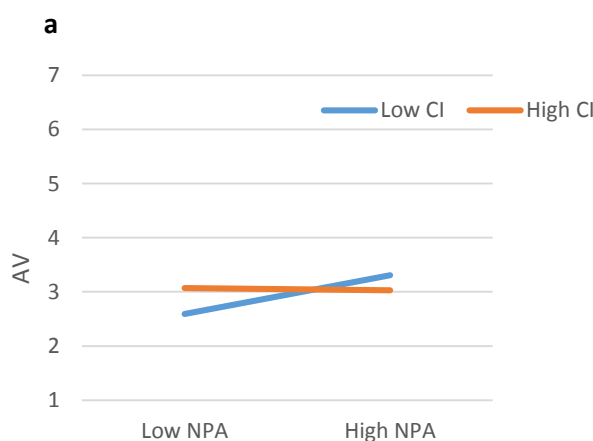


Figure 4.3 Moderation effects of competitive intensity



4.6 Discussion

The BoP's immense scale and growth prospects for both local and foreign firms signal a significant opportunity for business. In recognition of this opportunity, firms from all corners of the globe are seeing the benefit of developing competitive new products in BoP markets. We specifically focused on the extent to which local BoP manufacturers' collaboration with suppliers and customers helps them generate superior new product performance in the uncertain, difficult and diverse markets they operate in. While existing research has largely focused on the strategies applied by multinational firms targeting BoP markets (Schuster and Holtbrügge, 2014), this research paid attention to the local BoP manufacturing firms who face serious challenges to serve customers at the BoP. Further, we took into account the moderating role of the environmental factors that might hinder the contribution of suppliers and customers to BoP firms' NPD. Our findings unpack a process model that contributes to marketing and NPD research in two main ways.

First, the study advances understanding of NPD processes within local BoP manufacturing firms by showing the extent to which collaboration with customers and suppliers enhance new product advantages and new product performance. We integrate the role of collaboration with customers and suppliers into social capital theory, highlighting its positive impact on the NPD projects of local BoP manufacturing firms. The previous research on the role of social capital in NPD notes the importance of learning from stakeholders and using their capabilities (Acquaah, 2007; Ansari and Munir, 2012; Baker *et al.*, 2016). Yet, the main challenge lies in the translation of collaborative relations into new product advantages in the NPD processes of local BoP manufacturing firms (Hahn and Gold, 2014). By addressing the relationship between supplier and customer collaboration and new product advantage (in the form of cost and differentiation advantages) we offer insights into the different challenges experienced by local manufacturers in BoP markets.

We extend the application of three different yet related – theories - SPP, social capital and institutional by introducing specific mechanisms through which external relationships (as key assets) and sources of advantage can be linked to new product advantage and ultimately en route new product performance in an understudied context. In fact, our theory was supported by the view that when local manufacturers in BoP markets face improper institutional infrastructures, establishing informal and formal collaboration with external actors can act as a critical predictor for the new product success. More importantly, we provide empirical support for the claim that to achieve differentiation and cost-efficiency simultaneously (which is critical in BoP markets) collaboration with upstream and downstream actors (as sources of customer information, new product ideas, and distribution channels) is equally essential during an NPD project in BoP context. This finding also provides insight into the objectives of establishing collaboration with external actors during the NPD project and the scope (long term vs. short) that has to be considered by local BoP manufacturing firms.

Second, this research contributes to NPD and marketing literature by empirically demonstrating that the effectiveness of NPD collaboration in BoP markets might be contingent upon environmental factors such as market turbulence. The findings indicate that the positive effect of customer collaboration on new product advantage is evident only at the lower level of market turbulence, but this is not the case for supplier collaboration. Even if our data did not support our contention, we found that in highly turbulent BoP markets, holding and leveraging strong collaborations with suppliers is positive and beneficial in generating new product advantages. A possible explanation for this outcome is that in situations with a higher level of market turbulence in BoP markets – due to mutual financial benefits both manufacturer and supplier may generate a greater focus on novel and cost-effective new product ideas through provoking a more proactive approach towards market trends. This type of exchange between

the manufacturer and supplier in NPD projects may lead to better understanding of how can local manufacturers develop products that meet BoP customers' needs.

This finding has important empirical implications regarding how BoP firms formulate their marketing and NPD strategies (proactive vs. reactive) to cope with continuous changes in customer demands and tastes. The findings indicate that higher levels of competitive intensity make it more difficult for the local firm to attract BoP customers through appealing and problem-solving products. Firms are less likely to develop new products that meet the low-price expectations of customers beyond offering value to customers. This is because intense competition puts pressure on local firms to improve efficiency with lower prices, which may lead to tighter margins (Tsai and Yang, 2013). Thus, emphasis on differentiation and lower prices of products may harm the delivery of value to the customer under conditions of high competition in BoP markets. Conversely, the study indicates that local BoP firms in competitive environments might act aggressively to counter promotion wars and price competition in their markets by better executing NPD strategies that are in support of their limited resources. This enables BoP firms to quickly take advantage of opportunities that abound in such environments and subsequently achieve short-term new product performance.

4.6.1 Managerial implications

This study offers important implications for local BoP managers given their ongoing challenges to serve BoP customers with limited resources. Across different stages of the NPD processes, local BoP manufacturers need to make key decisions about the commercialisation of the new product and these decisions need to be made based on accurate data and interpretations of the market conditions. Our findings advise managers that customer collaboration is beyond the typical market research approaches and may require more in-depth involvement of the customer in different phases of NPD. At the same time, our research suggests that local BoP

manufacturers need to apply a balanced managerial view in enhancing their collaboration and exchanges with upward (suppliers) and downward (customers) in the supply chain. While we advise that BoP customers expect a problem solver and cost-efficient value offering, at the same time we argue that offering such a product sounds doable only if managers in local manufacturing firms concurrently engage both suppliers and customers as key collaborators during the NPD projects. To do so, local manufacturers require experienced people as members of the management team who have familiarity with the industry and its key actors. These people can use their networks to ease the collaboration process and also facilitate firm's access to complementary resources for NPD activities that the firm itself might lack.

Consideration of market turbulence can be a trigger issue in determining the efforts that should be devoted to managing the collaboration with customers and suppliers. Our findings raise the question that if pursuing intense collaborations is appropriate where market turbulence is high at least in relation to new product's positional advantage. In cases of high market turbulence managers in BoP need to pay careful attention to the adroit management and implementation of their collaborations with external partners during the NPD processes. Therefore, managers need to recognise that their disadvantaged situation may require more systematic and formal procedures in collaborating with customers and suppliers. Hence, effective control mechanisms would be needed to manage the flow of information and exchanges between the parties.

While our findings identify financial performance as an important NPD objective, at the same time we highlight the role of affordability as a significant feature captured by the market. Therefore, managers in BoP manufacturing firms need to pay more attention to the enhancement of efficiency in NPD processes while they encourage innovativeness in NPD. Adopting cost-efficient manufacturing methods and using processes with the least defect are essential to developing affordable products for the BoP market.

4.6.2 Limitation and future research

The implications drawn from our conceptual model should be interpreted with caution. First, we gathered data using a cross-sectional research design at a specific point in time. Lack of secondary data on performance outcomes constrains our ability to make appropriate casual interferences. Future research can adopt a longitudinal design which may improve understanding on how over time BoP firms manage collaboration and develop or lose product advantages as outlined in our model. Second, BoP markets are not homogenous, and the findings are grounded in Ethiopian manufacturing firms and the Ethiopian market. Therefore, caution should be given to generalising our findings to other BoP markets. Future research can adopt and extend our model in other BoP countries to ensure the validity of our findings. Third, this study examines the role of customers and suppliers collaboration, in supporting new product advantage en route to new product performance. Future research may examine the role of other types of collaboration with stakeholders such as universities, governments, and research institutions in BoP markets in enhancing new product advantage and new product performance. Fourth, innovation management and NPD literature pinpoint various environmental contingency factors (e.g., Carbonell and Rodriguez, 2006) that potentially impact the relationship between new product advantage and new product performance in BoP markets. Given the unique traits of BoP markets, future research may investigate the role of hostility dynamism, munificence and market potential to offer further insights into the role of collaboration and new product advantage in driving new product performance and affordability.

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Chapter 5

Conclusion and Discussion

The thesis set out to understand how BoP local manufacturing firms identify intra and extra-organisational factors determining customer value and product success in the BoP markets. To date, academic research has focused heavily on multinational companies from the West operating in BoP markets, and related findings are inconsistent regarding the effects of intra and extra-organisational factors on value creation and product success. This study is among the first to examine the effects of these factors to support local BoP manufacturing firms in fostering new product success. This chapter discusses the theoretical and managerial contribution of the thesis, and outlines limitations and future research directions. The discussion in the prior chapters provides insight into important determinants about how local BoP manufacturers create new product success and customer value in their markets. The thesis discussions mainly rely on the importance of strengthening resource base and acquiring organisational capability, improving intra organisational processes and collaborative arrangement with customers and suppliers. The study identifies the critical role of social ties, marketing capabilities, ambidextrous leadership, market turbulence and competitive intensity in the NPD processes of the BoP local firms. In particular, this study examines the influence of these factors in generating new product success for local BoP firms and value for BoP customers. The thesis applies the capability-based view, social capital, social exchange and institutional theories across three papers to investigate NPD practices of local firms at the BoP. First, the study presented in Chapter 2 utilises capability-based view and social capital theory to show how bricolage helps local BoP firms overcome resource limitations to innovatively deliver value-laden products to BoP customers. Further, the study demonstrates how social ties can facilitate access to resources and how collaboration drives new product advantage and success. Second, the study presented in Chapter 3 draws on social exchange theory to examine the role of key attitudinal and behavioural employee characteristics such as role ambiguity, team's problem-solving creativity and leadership in generating superior new product success

in the local BoP firms. Third, the study presented in Chapter 4 draws on social capital and institutional theory to explain how local BoP manufacturers bypass the unique challenges - such as underdeveloped distribution channels, poor institutional structure, and unpredictable BoP market condition - to successfully commercialise new products.

5.1 Consolidating research findings

In this section the thesis presents findings of study. The findings focus on aligning and answering research questions posited in chapter 1.

RQ1 states two key issues on: a) To what extent does bricolage capability enhance product innovativeness at the BoP for local manufacturing firms? And (b) to what extent do social ties attenuate the inverted U shape bricolage capability - product innovativeness relationship at the BoP for local manufacturing firms? Organisational resource deficits coupled with unmet needs of poor customers at the BoP have necessitated the need for local manufacturers to think of ways to acquire capabilities and mechanisms to innovate. Local BoP firms need to build capabilities to ensure product innovation success in the difficult and uncertain environment of the BoP markets. Firms operating in resource-scarce environments can develop capabilities, such as bricolage to be able to reallocate and recombine existing resources in creative ways (Baker & Nelson, 2005). While previous research theoretically alludes to the view that bricolage capability plays a key role in assisting firms to effectively reuse and recombine their existing resources to pursue their product innovation (e.g., Cunha et al., 2014; Pansera & Owen, 2015); such view has not been empirically substantiated. Building on, capability-based view and social capital theory the findings of the thesis empirically show the extent bricolage capability influences product innovation. The study (i.e., the moderating role of social ties on the inverted U shape relationship between bricolage and product innovativeness) highlights the importance of the neglected role of the moderating variables

(i.e., social ties) that mitigate the bricolage - product innovativeness non-linear relationship in BoP markets. Superior bricolage capacities result in stronger product innovativeness among BoP local firms, especially those with higher levels of established ties with civil society organisations. Whereas the inverse relationship between bricolage and product innovativeness becomes more negative as ties with government increases, indicating dark side of social ties in innovation.

RQ2 states two critical issues on: (a) To what extent does product innovativeness influence customer value at the BoP for local manufacturing firms? And (b) to what extent do marketing capabilities enhance the relationship between product innovativeness and customer value at the BoP for local manufacturing firms? The findings support the prediction that engaging in innovation and developing products that address customers' needs is the best way to create value for customers. In BoP markets, local firms who pursue the creation and delivery of superior customer value need to focus heavily on delivering products that customers identify as value offering as compared to their competitors' products (London, Anupindi, & Sheth, 2010). The thesis findings further indicate that local firms with superior marketing capabilities can better understand customers' wants and the activities of key competitors and are likely to deliver more value to customers.

RQ3 posits three main issues on: (a) To what extent does problem-solving creativity enhance new product performance in local BoP manufacturing firms? (b) To what extent does role ambiguity influence problem-solving creativity in local BoP manufacturing firms? And (c) to what extent does ambidextrous leadership neutralise the detrimental effects of role ambiguity on problem-solving creativity in local BoP manufacturing firms? In BoP, it appears that local firms can gain new product performance by developing and marketing new products that uniquely address and solve customer's problems (Ernst, Kahle, Dubiel, Prabhu, & Subramaniam, 2015). Building on the social exchange theory the study finds that problem-

solving creativity is a team endeavour and a key mechanism to solve customer problem in BoP and a precursor to new product success. The thesis shows that creative efforts to satisfying customers' unique needs in BoP leads to receiving positive feedback from the market in terms of higher sales and revenue. Products that better fit price expectations and requirements of BoP customers appear to be more successful in the marketplace. Team creativity plays a critical role in solving problems associated with NPD (Im & Workman, 2004), entails differentiation from competitors, and provides superior products for customers and new product performance for the firm. The thesis also identified two different work-related factors that might deter or benefit team problem-solving creativity. Notably, NPD manager's role ambiguity undermines team's problem-solving creativity while ambidextrous leadership is found to be useful in mitigating the impediments of NPD manager's role ambiguity on team's problem-solving creativity.

RQ4 focus on two critical issues on: (a) To what extent do customers and suppliers collaboration enhance new product advantage at the BoP for local manufacturing firms? And (b) To what extent does new product advantage contribute to affordability and new product performance at the BoP for local manufacturing firms? Previous research focusing on collaboration alludes to the view that customers and suppliers are key source of advantage in developed markets (Baker et al., 2016; Tsai, 2009), yet this view has received little empirical attention in BoP markets that have their own unique structure and conditions. As BoP firms strive to identify ways to access resources to innovate new products and achieve product success, they increasingly involve business collaborators in their NPD activities (Praceus, 2014). Collaboration with key actors in upstream and down streams supply chain activities is becoming a common practice in BoP markets (Gold, Hahn, & Seuring, 2013). The findings of this thesis underscore that collaboration with customers and suppliers has a direct and positive effect on new product advantage in the form of cost efficiency and differentiation in BoP

markets. In particular, absorbing and leveraging customers and suppliers knowledge through collaboration could lead to new product advantage (i.e., cost efficiency and differentiation).

RQ5 posits two key issues on: (a) to what extent does market turbulence moderate the relationship between customers and suppliers collaboration and new product advantage at the BoP for local BoP manufacturing firms? And (b) To what extent does competitive intensity moderates the relationship between product advantage and affordable value and new product performance for local BoP manufacturing firms ? Along with the demonstrated positive effects of collaboration on new product advantage, the findings show that environmental factors such as market turbulence negatively moderates the relationship between collaboration and new product advantage. Especially market turbulence weakens the relationship between customer collaboration and new product advantage. In BoP at higher levels of market turbulence firms could not take advantage of changing customer needs by involving the customers and suppliers to affect positional advantage. Neither local BoP firms could easily gain a clear understanding of their customers by monitoring and analysing the industry environment to create value through new product advantage. Similarly, under high competitive intensity firms cannot respond to pre-empt competitive threats in a timely manner, which weakens the impact of new product advantage on affordability. Yet facing a high level of competition may trigger BoP local firms to act aggressively and use their limited resources to respond to competitors' NPD strategies. Thus firms may be able to quickly commercialise their cost-efficient and differentiated new products and gain short term new product performance.

5.1.1 Theoretical implications

Alongside the major findings discussed above, the thesis identifies specific theoretical implications from the studies. First, the study presented in Chapter 2 advances understanding of the role of bricolage in product innovativeness for firms operating under significant resource

constraints. This is the typical pattern evident in BoP market settings. This suggests that the logic connecting bricolage to product innovativeness in BoP is more complex than previously postulated, and that bricolage is not always beneficial for innovation success (see Wu et al., 2017 for similar arguments). The study successfully extends knowledge of the effects of bricolage on innovation initially investigated by Senyard, Baker, Steffens, and Davidsson (2014) for the explanation of diminishing returns at higher levels of bricolage in local BoP firms. The study broadens theoretical understanding of how local BoP firms who operate in resource-constrained environments may address resource constraints and subsequently pursue innovation (see An, Zhao, Cao, Zhang, & Liu, 2017 for similar argument). On the other hand, existing innovation models rely heavily on risk and uncertainty reduction processes and to a large extent disregard resource limitations in local firms (Cunha, Rego, Oliveira, Rosado, & Habib, 2014). However, rather than considering resource scarcity as a threat to innovation, in BoP local firms it can be regarded as a crucial variable and opportunity. This study advances the capability-based view theory showing that, through bricolage capability, BoP firms can creatively use surrounding dormant resources (i.e., unutilised ties and collaboration with different stakeholders) to be innovative. Collectively, the thesis adds clarity to how bricolage can be fully beneficial in product innovativeness activities of local BoP firms.

Second, the thesis suggests that bricolage effects rely on specific NPD goals a firm sets in pursuing new product success, subsequently it highlights the key contingent factors to facilitate product innovation in BoP markets. Drawing upon social capital theory, the thesis further examined the moderating effects of social ties (i.e., ties with civil society and governments) on actualising the benefit of bricolage in product innovation. In support of this argument, the thesis extend the theory that local BoP firms with bricolage capability can facilitate their product innovativeness by building strong ties with civil society organisations. While it is highly possible that ties with civil society organisations are less important in more

advanced economies (Boso, Story, & Cadogan, 2013) they are critical in explaining variations in bricolage and product innovativeness activities in BoP market. The study added key theoretical implication by showing that, in BoP markets at higher levels of ties with civil society organisations (driven by social capital) attenuates diminishing return and facilitate benefit of bricolage. Civil society organisations act as conduits to acquire resources such as market and industry-specific knowledge. These resources allow BoP firms to formulate and implement product innovation strategies. Another theoretical implication is that inverted-U effects of bricolage becomes more negative as ties with government increases, demonstrating the potential dark side of ties with the government on product innovativeness. Such a result is in line with the conceptualisation that strong ties with government often leads to government's requests to support the fiscal policy and social welfare of the state (Kotabe, Jiang, & Murray, 2011). Thus, this causes local manufacturers to be distracted in product innovation, and eventually jeopardises the formulation and implementation of innovation.

Third, the thesis further provides credence to the contention that placing customer value first is essential for successful innovation, and marketing capabilities would enable for delivery of innovative products in BoP markets. Marketing capabilities contributes and augments new products success and to its impact on value creation processes (Acquaah & Agyapong, 2015). The marketing techniques which suits better to the peculiar conditions of BoP markets can be used to communicate customers about the value-offering characteristics and uniqueness of the firm's new product(s). Leveraging marketing capabilities facilitate offering value to customer via a new product that comprises features of functionality and affordability. Thus, the thesis extends the argument that BoP firms who focus on effectively exploiting their marketing capabilities can raise awareness of their new products that helps BoP customers to know what is available on the market and how to use them.

Fourth, Chapter 3 of the thesis has further opened the black box of creativity- new product performance link by evoking essential workplace behaviours such as NPD manager's role ambiguity and leadership in BoP firms. This thesis adds knowledge to social exchange theory by introducing workplace behaviours that are core impediments and enablers in NPD process within a team context. Based on the social exchange theory (Cropanzano & Mitchell, 2005), creative attempts are team endeavor that are driven by interdependent team members' exchange of creative ideas in a reciprocal relationship which is key to the team creative performance and NPD success (Agarwal, 2014; Liao, Liu, & Loi, 2010; Shalley & Gilson, 2004). The thesis extends the current literature focusing on potential effects of role ambiguity showing that role ambiguity has a negative effect on team's creativity endeavours. The study underscores the importance of clarifying duties, and clear job goals and objectives for NPD managers and team members in the BoP market. Consistent with that of Beauchamp, Bray, Eys, and Carron (2005) the thesis further clarifies that the causes of role ambiguity for managers and team members are linked to lack of appropriate job-related information and communication from the leadership. The primary source of role senders and job-related goals and objectives in organisations are typically leaders in organisations. Therefore, concerning the potential barriers and enablers of team's problem-solving creativity in BoP firms, the thesis extend the view that that astute leaders who are ambidextrous (deploying both transactional and transformational styles) at a greater extent can minimise the negative outcomes of role ambiguity.

Fifth, Chapter 4 of the thesis extends understanding on customers and suppliers collaboration as a source new product advantage to drive product success and value. Drawing on source- position- performance framework (Day & Wensley, 1988), social capital and institutional theories, the thesis address the debate about the ultimate goal of NPD to improve new product performance and deliver value. The thesis substantiates a close linkage between

collaboration and new product advantage in local BoP firms. By doing so, the thesis provides evidence for the literature assumption that local BoP firms' efforts in collaborating with customers and suppliers to develop affordable products with unique features are key successes in BoP markets that deliver value to customers and pays off financially to firms.

Sixth, this thesis extends the role of market conditions that influence the direction and strength of the effects of customers and suppliers collaboration on product advantage to drive affordability and new product performance in BoP markets. The study reveals that the effect of customers and suppliers collaboration on new product advantage varies under different levels of market turbulence. Because new product success relies in part on the environment in which the new product must compete (Droge, Calantone, & Harmancioglu, 2008). The study specifically supports the theory that the benefits of customer collaboration in BoP markets can be realised under relatively stable environment. Under high market turbulence conditions, customer collaboration can be detrimental to new product advantage while supplier collaboration is not. In a highly turbulent market BoP firm managers may be unable to articulate needs and face uncertainty about market opportunities. Subsequently, they fail to predict customers' wants to provide affordable and differentiated products accurately. In the case of high competitive intensity, the study provides evidence and predicts two different outcomes of new product advantage. When BoP firms operate under highly competitive markets, they heavily engage in mimicking competitors' action and pursuing incremental product innovations. As such, new product offering may not exhibit dimensions of value. On the other hand, local BoP firms may use their limited resource to beat the intense competition, thus during short periods of stiff competition BoP firms may be able to generate short-term new product performance. This contributes to decision making process by highlighting the importance of aligning BoP firms' long or short term strategic decisions and market conditions.

5.1.2 Managerial implications

The opportunities of BoP markets have been recognised by many researchers, politicians, and business leaders (Schuster & Holtbrügge, 2014). However, factors facilitating new product success and delivery of customer value are still unclear for local BoP managers and policymakers. These managerial implications are extracted from the three interwoven chapters (Chapter 2, 3 and 4). The thesis holds implications that would be important for local managers and government policymakers at the BoP.

As indicated in Chapter 2, resource combinations and overcoming resource constraints to deliver superior value to customers are critical issues in BoP markets. Beyond overcoming resource constraints, bricolage also proactively stimulates innovation and strategic renewal in BoP firms (Cunha, Rego, Oliveira, Rosado, & Habib, 2014). Thus, top managers are advised to leverage bricolage to identify innovation opportunities for growth and meeting demands of customers. Employees in NPD teams who use resources and do reuse and recombine resources (resources bricolage) frequently have better understanding of the potential uses of available resources, managers should motivate team members and employees to identify new opportunities in the bricolage process. As such firm managers can identify formal ways to reward and motivate employees on creativity.

Managers can enrich their resource bases by managing social networking capabilities and developing close relationships with civil society organisations. To do so, firms should employ experienced people in the management team who are familiar with market and industry context of the BoP. The message for managers involved in policymaking is clear that the government should create a conducive environment that facilitates the creation of social networking and partnership with actors in the market. BoP local managers should engage in the process of creating and delivering value by concurrently offering products with affordable,

high quality and problem-solving features to the BoP customers. Firms can adopt various low cost innovations using already existing technologies that enhance efficiency and price checks at each of the value chain in production. Generally, low price and value offering products are precedents for new product success in the BoP market. Thus BoP firm managers should persist with customer value creation initiatives through new product offerings. Given that product innovation is critical to outperform rivals in BoP markets (Agnihotri, 2015), new and superior products that offer benefits, solve problems and compatible with the unique wants of BoP customers and price expectations are likely to give firms an edge in the BoP marketplace.

The thesis findings in Chapter 3 suggest that new product success tend to be driven more by team's problem-solving creativity at the BoP. Local firm managers who pay less attention to providing creative solutions may not achieve the intended firm objectives in product innovation. Furthermore, work environments are critical determinants of employees' performance. Hence, managers should create an environment that facilitates communication and understanding of responsibilities and expectations between the leaders and NPD team members. Managers can be instrumental regarding creating an environment that stimulates the development of creative product-based solutions by providing rewards for compliance and focusing on close supervision, and concurrently inspiring, urging and exhorting subordinates to look for new and better methods of performing tasks. This can happen through adopting ambidextrous leadership principles.

Chapter 4 outlines the critical roles that customers and suppliers can play in generating new product advantages and new product success in the BoP market. Managers should consider actively collaborating with customers and suppliers in NPD processes. They should also weight the risk and benefit of collaborators for suitability to drive innovation performance. Along with the increasing market competition and market turbulence, the success of product innovations is becoming more important to BoP firms. BoP managers are advised to closely monitor these

market-related factors. BoP firms should pay special attention to the correct implementation of different kinds of collaborations to ensure new product advantage and drive innovation performances in highly turbulent and competitive contexts. Firms should recognise that their unique BoP market situation probably requires different strategies and marketing actions if they are to satisfy customers' needs better than their competitors.

5.1.3 Limitations and directions for future research

This thesis explores the intra and extra organisational factors that determine new product success and customer value creation at the BoP. Mentioning the limitations of this study may open up fertile avenues for future studies. Each chapter (2, 3 and 4) indicates limitations and directions for further research specific to the indicated chapters. In this section, the thesis focuses on mentioning limitations and introducing directions for future research and scholars aspiring to research the BoP. First, given this study has been conducted among BoP manufacturing firms, future study can investigate the same frameworks in the BoP service sectors to provide meaningful theoretical and managerial implications and to ensure whether the relationships discussed herein can be generalised.

Second, the thesis makes use of cross-sectional designs which does not allow conclusion regarding causal inference. Replicating the findings of the thesis using different methods would be highly valuable. For example, this thesis did not collect a longitudinal data, which may allow for stronger causal interpretations of the thesis models and would provide more robust conclusions. Future research should address this issue by conducting a longitudinal study to strengthen the causal inference of the relationships examined in this study.

Third, beyond the examined moderating variables (i.e., social ties, marketing capabilities, market turbulence, competitive intensity, and ambidextrous leadership), further research can scrutinise other contingency factors to better examine the relationships studied in

this thesis. For example, scholars may identify internal and external organisational factors that moderate, enhance or hinder product innovativeness, problems solving creativity and new product advantages.

Fourth, in this study firms refused to provide objective data on performance due to confidentiality. Thus researchers in the future studies can attempt to gather objective and historical data to build and test the performance variables considered. Moreover, firms studied belong to different industries as such to avoid any possible confounding effects due to unmeasured industry-level factors; future research can be conducted in the context of a single industry.

Fifth, this research focuses on local BoP manufacturing firms operating in Ethiopia. Ethiopia shares similar characteristics to other BoP countries such as inadequate market-supporting institutions, institutional barriers, high rates of unemployment, and improvised society (Altenburg, 2010). However, other BoP and non-BoP developing markets located in other countries may bring different patterns related to NPD practices. Therefore, future research may focus on multi-country design that test differences across different BoP and non-BoP markets.

Finally, this study did not assess cultural and behavioural aspects unique to the context that can be addressed through qualitative research. This may assist to gather information through either some form of naturalistic observation such as ethnography or structured interviews. Especially information about BoP customers' behaviours and needs, and a variety of other information that are crucial in offering products that will fit into a customer's life.

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Appendix

Ethics approval and conference presentations and acceptance letters

Appendix A–Ethics approval

Social Science Ethics Officer
Private Bag 01 Hobart
Tasmania 7001 Australia
Tel: (03) 6226 2763
Fax: (03) 6226 7148



HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

05 January 2016

Professor Aron O'Cass
Tasmanian School of Business and Economics
Private Bag 16

Dear Professor O'Cass

Re: FULL ETHICS APPLICATION APPROVAL
Ethics Ref: H0015428 - A closer look at what the base of the pyramid consumer wants:
Supporting new product commercialisation at the base of the pyramid markets through
collaboration

We are pleased to advise that the Tasmania Social Sciences Human Research Ethics Committee approved the above project on 4/1/2016.

This approval constitutes ethical clearance by the Tasmania Social Sciences Human Research Ethics Committee. The decision and authority to commence the associated research may be dependent on factors beyond the remit of the ethics review process. For example, your research may need ethics clearance from other organisations or review by your research governance coordinator or Head of Department. It is your responsibility to find out if the approval of other bodies or authorities is required. It is recommended that the proposed research should not commence until you have satisfied these requirements.

Please note that this approval is for four years and is conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

The following conditions apply to this approval. Failure to abide by these conditions may result in suspension or discontinuation of approval.

1. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval, to ensure the project is conducted as approved by the Ethics Committee, and to notify the Committee if any investigators are added to, or cease involvement with, the project.

A PARTNERSHIP PROGRAM IN CONJUNCTION WITH THE DEPARTMENT OF HEALTH AND HUMAN SERVICES

2. Complaints: If any complaints are received or ethical issues arise during the course of the project, investigators should advise the Executive Officer of the Ethics Committee on 03 6226 7479 or human.ethics@utas.edu.au.
3. Incidents or adverse effects: Investigators should notify the Ethics Committee immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
4. Amendments to Project: Modifications to the project must not proceed until approval is obtained from the Ethics Committee. Please submit an Amendment Form (available on our website) to notify the Ethics Committee of the proposed modifications.
5. Annual Report: Continued approval for this project is dependent on the submission of a Progress Report by the anniversary date of your approval. You will be sent a courtesy reminder closer to this date. Failure to submit a Progress Report will mean that ethics approval for this project will lapse.
6. Final Report: A Final Report and a copy of any published material arising from the project, either in full or abstract, must be provided at the end of the project.

Yours sincerely



Natasha Jones
Ethics Officer
Tasmania Social Sciences HREC

Ethics Approval

Inbox x

**FBE HDR Admin Enquiry** <hdrbusecon@mq.edu.au>

to Seyed, me, nazia.nabi, Aron, FBE, Lorne, Nikola

Dear Mahdi, Hailu and Nazia,

Hope you have settled well in Sydney and are travelling good so far in terms of your research. I'm writing to you about a couple of things as follows:

1. Ethics Approval – I remembered that a couple of you if not all of you have mentioned to me that you have obtained Ethics Approval from the University of Tasn Faculty Research Unit at [REDACTED] (addressing to Alex please) for their record? Thank you.
2. Completion Review meeting – I am in the process of scheduling a Completion Review meeting for each one of you at the moment. Completion Review is one of their candidature. The aim of the meeting is to find out how you are travelling so far, what you have done and what remains for you to complete, are you going to c You will have a chance to demonstrate your progress so far to the review panel, which consists of your supervisory panel members, the Departmental PhD Coordin meeting invite very soon.

Should you have any inquiries, please feel free to contact us.

Kind regards,

Lin

Faculty HDR – Donna Boyd [REDACTED] and Lin Bai [REDACTED]
Faculty of Business and Economics
Higher Degree Research | Level 7, E4A Building
Macquarie University, NSW 2109, Australia
mq.edu.au



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3/24/2018 Hailu Getnet [REDACTED] Ethics approval letter - [REDACTED] - Macquarie University Student Email and Cale...

Hailu Getnet [REDACTED] Ethics approval letter



Hailu Getnet [REDACTED]
to fberu

Hello Alex,

As per Lin's advice to forward a copy of our ethics approval from our former university, Please find attached a copy of ethics approval.

Regards,



Hailu Getnet



Click here to [Reply](#) or [Forward](#)

Appendix B: List of conference presentations and acceptance letters

1. Products in the age of disruption research forum conference: Product Development Management Association (PDMA) in association with JPIM, Chicago Nov 2017.

“Benefits of Bricolage and Ties in NPD at the Base of the Pyramid Market (BoP)”

Getnet, H O’Cass, A, Ahmadi, H and Siahtiri, V.

2. Research with impact – reality or rhetoric? Dec 4-6, 2017: RMIT University Melbourne Australia: Australian and New Zealand marketing Academy conference (ANZMAC).

Does problem solving creativity pay off in NPD?”

Getnet, H O’Cass, A and Ahmadi, H and Siahtiri, V

3. Graduate research Conference: University of Tasmania Sept 4-5, 2015

Supporting new product commercialization at the base of the pyramid markets through collaboration”

Getnet, H O’Cass, A and Ahmadi, H

Hailu Getnet

From: PDMA RF 2017 [REDACTED]
Sent: Tuesday, 25 July 2017 11:44 AM
To: Hailu Getnet
Subject: PDMA RF 2017 notification for paper 27

Follow Up Flag: Follow up
Flag Status: Flagged

Dear colleague:

Congratulations! Your submission to the 2017 PDMA Research Forum, titled "Benefits of Bricolage and Ties in NPD at the Base of the Pyramid Market", has been accepted. This decision is based on our consideration of the comments provided by reviewers, as well as our own reading of your paper. Please find the comments at the end of this email.

The 2017 PDMA Research Forum will be held at the Swissôtel Hotel, Chicago, on November 11-12. Presentation time slots are 20 minutes. Please note that at least one author must register for and attend the conference to present the paper. If none of the authors has registered by October 16, 2017, your paper will be dropped from the program. Please follow this link to register for the 2017 Research Forum: <http://www.pim.pdma.org/p/cm/ld/fid=1975>.

Please note that early bird registration ends this Friday, July 28th.

To be included in the conference proceedings, please send your final paper before September 8, 2017 to researchforum@pdma.org and copy mcnally@sxu.edu on the email (Please put "Research Forum Final Paper" in the subject line). You may choose to publish a full paper or an extended abstract, although the extended abstract needs to be a substantial one of at least four or five pages. Please send a Microsoft Word file that includes author information and paper title and is formatted in JPIM style.

Again, congratulations! We look forward to your contribution to the conference. Please feel free to contact us if you have any questions.

Sincerely,

Gina McNally, Saint Xavier University [REDACTED] Janell Townsend, Oakland University
[REDACTED] Co-chairs, 2017 PDMA Research Forum

----- REVIEW 1 -----

PAPER: 27

TITLE: Benefits of Bricolage and Ties in NPD at the Base of the Pyramid Market

AUTHORS: Hailu Getnet, Aron O'cass, Hormoz Ahmadi and Vide Siahtiri

----- Review -----

The authors present a well crafted abstract focused on bricolage and innovativeness at the base of the pyramid. The intersection of bricolage and BoP is logical, and these are both reasonably hot topics that will be well received at the research forum (and as the authors contend, there has not been much work yet at this intersection). The sample seems well suited (and in a rarely seen Ethiopian context). To me, this research surpasses the bar for conference presentation; I will mention a few thoughts that I hope can help the authors as they presumably progress towards journal submission.

Decision Letter (ANZMAC2017-117)

From: [REDACTED]
To: [REDACTED]
CC:

Subject: ANZMAC 2017 - Decision on Manuscript ID ANZMAC2017-117

Body: 27-Aug-2017

Dear Mr. Getnet:

Thank you for your submission to the ANZMAC 2017 Conference. Following a process of double-blind peer review, we are pleased to advise that your manuscript entitled "At Base of the pyramid (BoP): Does employees' problem solving creativity pays off in New Product Development?" has been ACCEPTED as a Competitive Paper for presentation at the Conference. The comments of the reviewer(s) who reviewed your manuscript are included at the bottom of this email.

To submit your abstract OR revised manuscript for publication in the Conference Proceedings, PLEASE FOLLOW THE STEPS BELOW before the 15th of September:

1. Log into <https://mc.manuscriptcentral.com/anzmac2017> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions."
2. Under "Action," select "create a revision." Your manuscript number has been appended to denote a revision. You do not need to provide a response to the decision letter, however in the 'Your Response' field please enter the name of the presenting author for this paper.
3. You will not be able to make revisions on the originally submitted manuscript. Instead, revise your manuscript using a word processing programme on your computer. Use the appropriate template provided with this email to make your revision - either for resubmission as an abstract or as a full paper to be included in the conference proceedings.
4. When the revised manuscript is ready, upload your revision and resubmit it through the Author Center.
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6. For your convenience, templates as well as files with formatting examples for both an Abstract Only final submission, two-page paper and a five-page final submission can be found attached to this email. Please closely follow the appropriate example using the template provided with this email for the form of submission you have chosen in order for your work to appear correctly in the Conference Proceedings.
7. Please note that it is a requirement for at least one author to attend and present the paper at the Conference and no author may present more than two papers. If at least one of the authors for a paper has not registered by the 15th of October, the paper will be removed from the program. Registration details can be found at <https://www.rmit.edu.au/anzmac2017>

Thank you for your contribution. We look forward to receiving your abstract or revised paper for publication in the Conference Proceedings.

Sincerely,
ANZMAC 2017 Conference Organising Committee